# the OIL AND GAS JOURNAL

NOVEMBER 5
1936



DEPARTMENT OF GEOGRAPHY
THE UNIVERSITY OF NEBRASKA



PRICE
5 CENTS



MISSION *Compliments the* A·P·I

Night Scene, Mission Manufacturing Company, Houston, Texas

...MISSION MARCHES ON
*Day and Night*

to keep up with the demand for Mission Products that are saving time, money, and trouble for the oil fraternity « « « « « « « « « «

THE WORLD OVER

MISSION MANUFACTURING CO.

HUMBLE ROAD HOUSTON TEXAS

MISSION SLIPS . . . MISSION VALVES . . . MISSION PISTONS . . . MISSION SWABS

*Sold by Supply Stores Everywhere*

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# LARGE CAPACITY METERS

*built by*

**NO'S. 2½-3-4**

*all have these exclusive features*

# EMCO

Repairs or inspection made with meter in the line, even when set in a pit or against a wall. Saves time and labor.

Removable Valve Plate on which all working parts are mounted. May be replaced quickly by accurately calibrated spare assembly, insuring practically continuous service from the meter at all times.

One Piece Body Casting assures freedom from leaks. Stronger than any body requiring side plates. Design requires 66% less bolts and cap screws. Eliminates gasket trouble.

*The* **EMCORECTOR**

**EMCO Large Capacity Meters, fitted with the EMCORECTOR, give an accurate, direct reading of volume corrected to any base pressure, and eliminate the time and expense involved in making chart calculations.**

**PITTSBURGH EQUITABLE METER CO.**

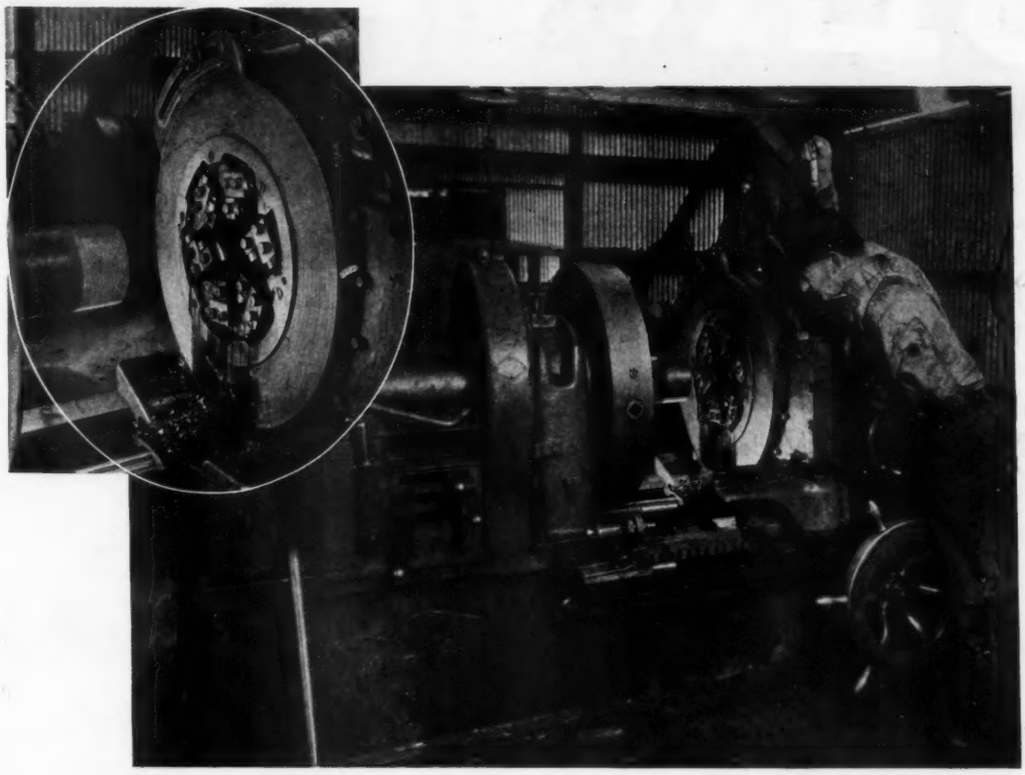
MERCO NORDSTROM VALVE CO.

MAIN OFFICES PITTSBURGH, PA.

ATLANTA BUFFALO CHICAGO MEMPHIS
NEW YORK COLUMBIA KANSAS CITY PHILADELPHIA TULSA HOUSTON LOS ANGELES OAKLAND

This volume contains index for calendar year 1936.


# The New LANDIS
# Has Accuracy, Speed, and Economy



The Oil Tool Exchange, Long Beach, Calif., operates a typical oil field shop, threading everything from low carbon welded pipe to Grade D Seamless. This shop is outstanding for the quality of its threads—the answer being a LANDIS Pipe Threading and Cutting Machine with the new receding chaser die head, recently installed.

It takes a machine with more than ordinary ability to produce results efficiently and economically in shops of this type where set-up changes are frequent and where they handle both new and used tubular goods of various grades. In fact, the only condition which never varies is the quality and accuracy of the threads produced on their LANDIS.

The new LANDIS Pipe Threading and Cutting Machine is unusual. It is faster, more accurate, and more economical to operate than older type machines, and it retains these qualities even when threading Grade D seamless.

May we send you complete details?

## LANDIS MACHINE COMPANY, Inc., Waynesboro, Penna., U. S. A.

REPRESENTED IN THE DOMESTIC OIL FIELDS BY:

Colcord-Wright Machinery & Supply Co., St. Louis, Mo.; D. S. Mair Machinery Corp., Houston and Dallas, Texas; Murray, Baker, Frederic, Inc., New Orleans, La.; Moore Machinery Co., San Francisco and Los Angeles, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.



The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $6.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.



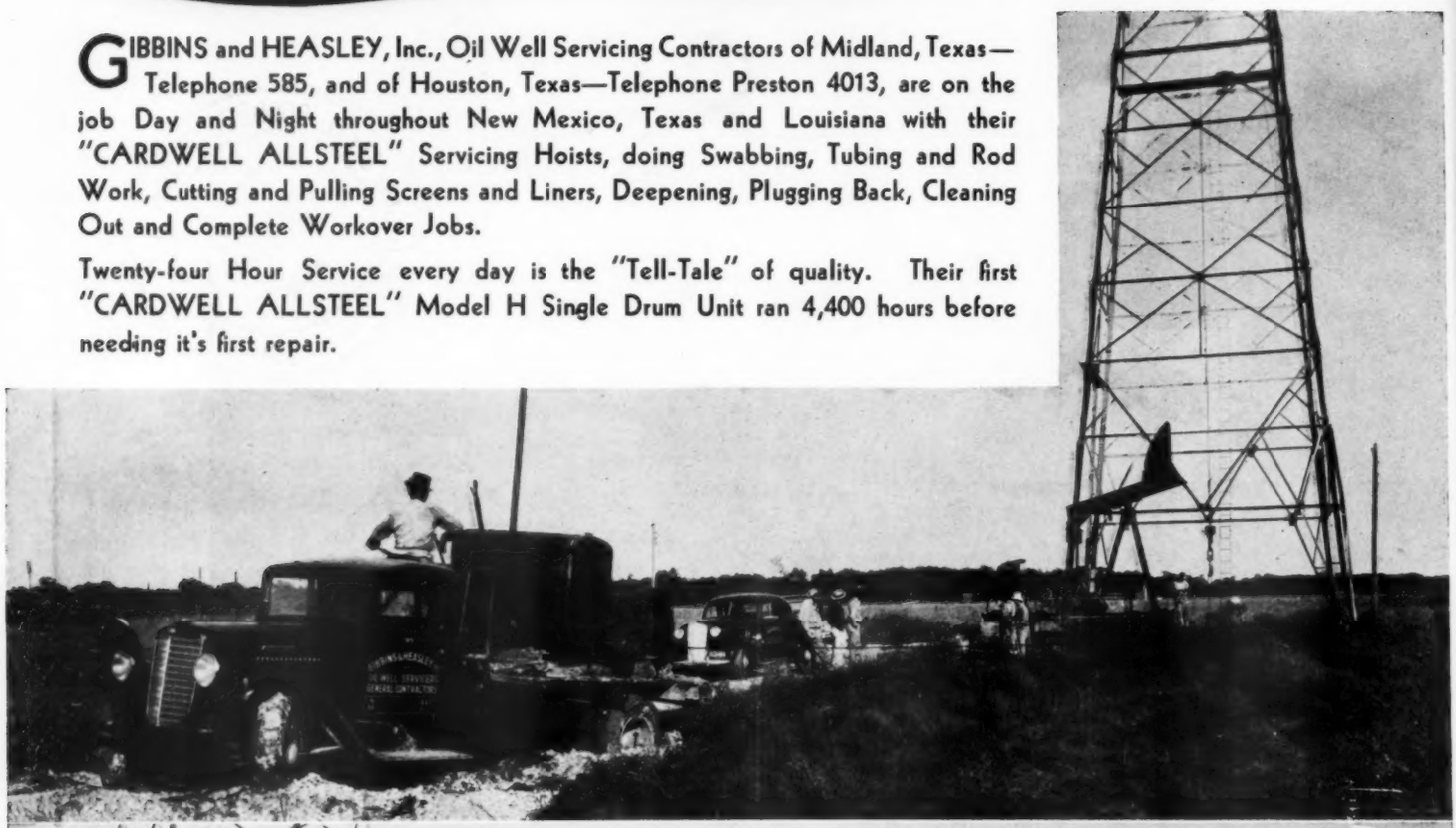


140398

# SERVICE

GIBBINS and HEASLEY, Inc., Oil Well Servicing Contractors of Midland, Texas—Telephone 585, and of Houston, Texas—Telephone Preston 4013, are on the job Day and Night throughout New Mexico, Texas and Louisiana with their "CARDWELL ALLSTEEL" Servicing Hoists, doing Swabbing, Tubing and Rod Work, Cutting and Pulling Screens and Liners, Deepening, Plugging Back, Cleaning Out and Complete Workover Jobs.

Twenty-four Hour Service every day is the "Tell-Tale" of quality. Their first "CARDWELL ALLSTEEL" Model H Single Drum Unit ran 4,400 hours before needing it's first repair.



CARDWELL ALLSTEEL
REG. U. S. TRADE MARK PAT. OFFICE

This Trade Mark insures Highest Quality at Lowest Price

**ALLSTEEL PRODUCTS MFG. CO.**
Wichita, Kansas, U. S. A.
801 So. Wichita St., P. O. Drawer 2001
CABLE ADDRESS "ALLSTEEL" PHONES L. D. 289, LOCAL 4-4381—4-4389

Crane Standard Cast Iron Flanged Fittings in refinery service. Complete data, ratings and dimensions of Crane Iron Flanged Fittings and Flanges on Pages 271 to 295, new Crane No. 52 Catalog

● The faces of Crane Standard Cast Iron Flanged Fittings are at true right angles to the line of flow and are accurately machined and finished to insure a firm grip on the gasket. This results in joints which are dependably tight and which remain tight because none have to be forced. These Crane fittings are particularly appreciated for their accuracy in making up cooling coils. Units pull up perfectly without springing into place.

This natural tightness of fit is typical of the exacting standards of design, material and workmanship which identify Crane valves and fittings. Standardizing upon them insures valve and fitting dependability and minimum maintenance. Stocks are maintained in all oil and natural gas centers to insure prompt service. Just telephone your requirements.

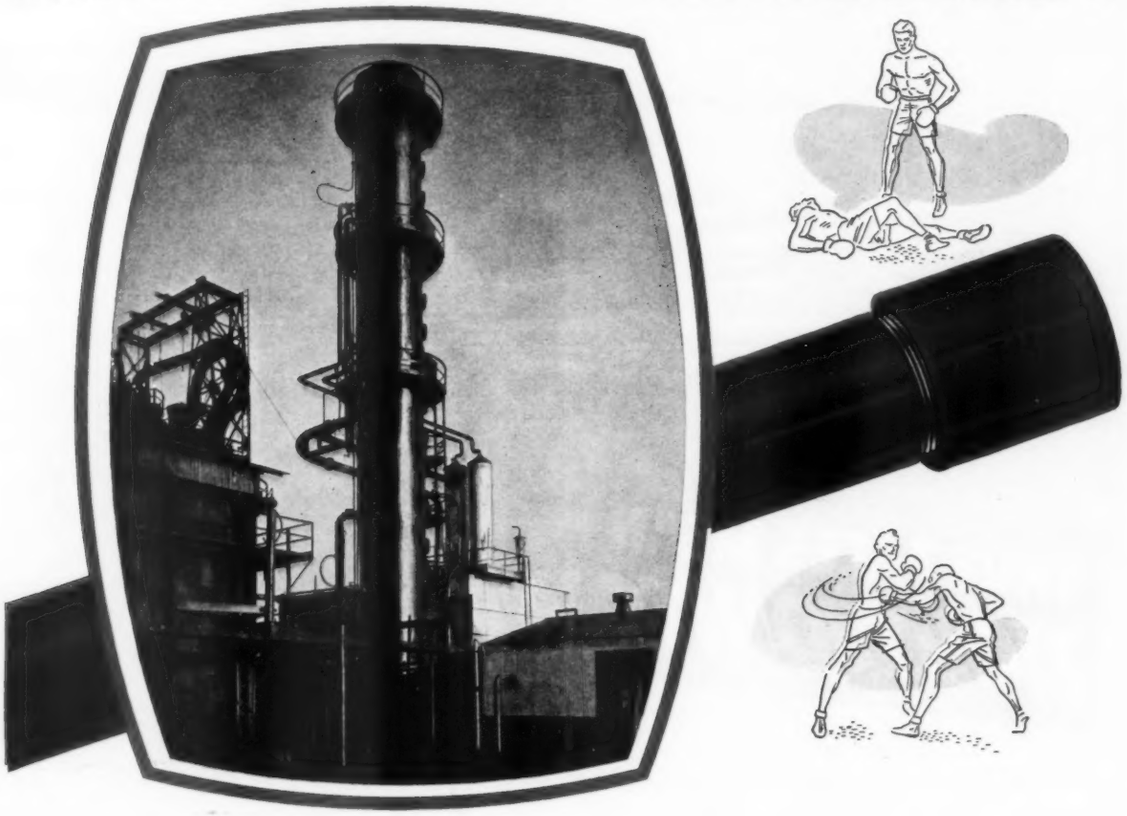
# CRANE

CRANE CO., GENERAL OFFICES: 836 SO. MICHIGAN AVE., CHICAGO, ILL. • NEW YORK: 23 W. 44TH STREET

*Branches and Sales Offices in One Hundred and Sixty Cities*

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

# WHERE ORDINARY PIPE *TAKES A LICKING*



# TONCAN IRON PIPE

## BATTLES ON AND ON FOR MANY YEARS

There are many places in and around refineries where ordinary ferrous pipe falls before the attack of rust and corrosion — results in frequent replacement and higher-than-necessary piping costs. For such applications — acid sludge lines, clay slurry lines, coils for hot brine wash tanks, cooling coils and cooling towers, weak sulphuric acid lines, crude lines, power piping, and, as in the refinery above, untreated gasoline reflux lines, spray equipment in agitators, lines between and drains from acid treating towers — refinery engineers and operators use Toncan Iron Pipe for economy.

Toncan Iron resists rust and corrosion better than any ferrous material in its price class — it lasts longer — it cuts piping costs — because it is a carefully refined open-hearth iron with which copper and molybdenum are alloyed in correct proportion. Toncan Iron Pipe is clean and free from scale, mechanically perfect and easy to work and weld with no material effect on its high resistance to rust. If you're interested in licking corrosion, write for a copy of "Pipe for Permanence"— it tells the story in detail.

REPUBLIC STEEL REG. U.S. PAT. OFF. TONCAN COPPER MO-LYB-DEN-UM IRON PIPE

Look to Republic for all your piping requirements — steel, copper-bearing steel and rust-resisting Toncan Copper Molybdenum Iron in butt weld, lap weld and electric weld pipe — also casing, tubing, drive pipe and line pipe.

Republic Steel CORPORATION

GENERAL OFFICES · · · CLEVELAND, OHIO

*When writing Republic Steel Corporation for further information, please address Department OG.*

# *At least* 127 DAYS TO SPRING

## NOW'S THE TIME TO BUILD YOUR ETHYL BUSINESS

REMEMBER LAST WINTER? Another long, tough one is just ahead. That means *hundreds* of cold starts . . . *thousands* of slippery miles *for your customers.* Tell them the comfort, safety and quick starting you have for them in your Ethyl pump...they want it. This advertisement in color in leading magazines will help you build Ethyl business now. And remember — Ethyl buyers are better customers for every high-grade product and service you sell — *more* profitable customers to you. Talk up Ethyl now.

## *SIGN OF THE BEST WINTER GASOLINE*

*STARTS QUICKER . . . AND STOPS KNOCK*

ETHYL

ETHYL GASOLINE CORPORATION

(Contains tetraethyl lead)

*"This winter use Ethyl"*

**SOLD BY THESE 117 OIL REFINING COMPANIES, MORE THAN ONE HUNDRED THOUSAND DEALERS, AND MORE THAN TEN THOUSAND JOBBERS!**

***IN UNITED STATES***

Aetna Oil Service, Inc.
Allegany Refiners, Inc.
Allegheny-Arrow Oil Co.
American Oil Co.
Anderson-Prichard Refining Corp.
Arro Oil & Refining Co.
Ashland Refining Co.
Associated Oil Co.
Atlantic Refining Co.
Atlas Pipeline Corp.
Barnsdall Refining Corp.
Bell Oil & Gas Co.
Bradford Oil Refining Co.
R. R. Bush Oil Co.
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Canfield Oil Co.
Chalmette Petroleum Corp.
Champlin Refining Co.
Cities Service Oil Co.
Cities Service Refining Co.
Colonial Beacon Oil Co.
Col-Tex Refining Co.
Continental Oil Co.
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Crystal Oil Refining Corp.
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Deep Rock Oil Corp.
Derby Oil Co.
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El Dorado Refining Co.
Elk Refining Co.
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Fleet-Wing Corp.
Freedom Oil Works Co.
General Petroleum Corp. of California
Gilmore Oil Co.
Globe Oil & Refining Co.
Gulf Oil Corp.
Hancock Oil Co. of California
Hickok Oil Corp.
Home Oil & Refining Co.
Humble Oil & Refining Co.
Independent Refining Co.
Indian Refining Co.
Johnson Oil Refining Co.
Kanotex Refining Co.
Kendall Refining Co.
Latonia Refining Corp.
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Louisiana Oil Refining Corp.
MacMillan Petroleum Corp.
Magnolia Petroleum Co.
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Omar Refining Co.
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Richfield Oil Co. of California
Richfield Oil Corp. of New York
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Rock Island Refining Co.
Rodessa Oil & Refining Corp.
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St. Helen's Petroleum Co., Ltd.
Seaside Oil Co.
Shell Eastern Petroleum Products, Inc.
Shell Oil Co.
Shell Petroleum Corp.
Signal Oil Co.
Sinclair Refining Co.
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Socony-Vacuum Oil Co. Inc.
Lubrite Division
White Eagle Division
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Standard Oil Co. (Indiana)
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Standard Oil Co. of Louisiana
Standard Oil Co. (Nebraska)
Standard Oil Co. of New Jersey
Standard Oil Co. (Ohio)
Standard Oil Co. of Pennsylvania
Stahdard Oil Co. of Texas
Standard Oil of New York
Sterling Oil Co.
Stoll Oil Refining Co.
Sunset Oil Co.
Texas Company
Texas Pacific Coal & Oil Co.
Tide Water Oil Co.
Tide Water Oil Co. (Oklahoma)
Tri-State Refining Co.
Union Oil Co. of California
United Refining Co.
Utah Oil Refining Co.
Valvoline Oil Co.
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Wadhams Oil Co.
Waggoner Refining Co., Inc.
Warner-Quinlan Co.
H. F. Wilcox Oil & Gas Co.
Wirt Franklin Petroleum Corp.
Wolverine-Empire Refining Co., Inc.
Yale Oil Corp.

# USE GULF PARVIS OIL

## *for low Diesel operating costs!*

Gulf Parvis Oils are helping operators of many leading Diesel plants, such as the one shown above, make substantial reductions in over-all operating costs.

## 5 Reasons

### Why Gulf PARVIS OILS Reduce Diesel Operating Costs

1 **GULF PARVIS OILS** are especially manufactured for lubrication of Diesel engines. High temperatures, contamination with fuel and moisture and constant churning in the presence of air—all encountered in Diesel engine operation—necessitate the use of an oil especially prepared to withstand these conditions.

2 **GULF PARVIS OILS** insure minimum wear of cylinders, pistons and bearings. The tough film provided by GULF PARVIS OILS is not readily removed from the cylinder walls and pistons, insuring proper lubrication of these parts at all times.

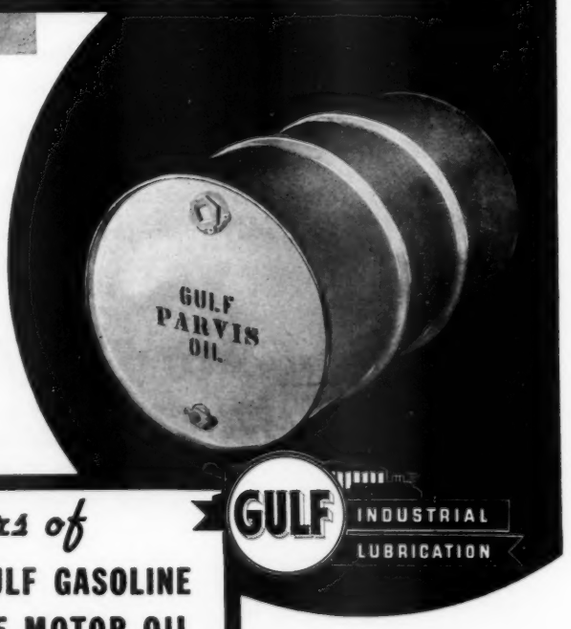
3 **GULF PARVIS OILS** insure minimum consumption. Because they are made from specially selected crudes and manufactured by the most modern refining methods, GULF PARVIS OILS withstand the high temperatures encountered in Diesel engine operation. A minimum of make-up oil is required.

4 **GULF PARVIS OILS** reduce operating costs. Because of the stability and high lubricating quality of these oils, wear and repair expense are minimized. Lower oil consumption and lower maintenance costs reflect substantial savings in over-all operating costs.

5 **GULF PARVIS OILS** are low in carbon content—a safeguard against carbon deposits resulting from the lubricating oil. With good atomization of fuel and complete combustion, rings retain their freedom. Thus, the oil contributes to full power and operating efficiency.

LEADING Diesel operators have established this fact: Over-all operating costs usually have a direct relationship to the efficiency of lubrication. With Gulf Parvis Oil in service, many plant operators are reporting the lowest operating costs in their experience.

Gulf Parvis Oil stands up over long periods of service—costs less to use in the long run. This quality lubricant has been scientifically manufactured to provide maximum protection for cylinders, pistons and bearings—with low consumption. It will help you keep maintenance costs at a low level.




**GULF OIL CORPORATION**
**GULF REFINING COMPANY**
GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.

*Makers of*
**THAT GOOD GULF GASOLINE AND GULFLUBE MOTOR OIL**

GULF INDUSTRIAL LUBRICATION

# EVER TRY *to wear out a Tiger?*

IT'S more than a man's size job. American Tiger Brand Wire Lines have established hundreds of service records—that's how hard it is to wear them out.

Wire Lines are so important to you that you should play safe. You need Wire Lines you can depend on—Wire Lines that have strength and are safe. Call on American Steel & Wire Company engineers to help you any time, any place.

AMERICAN STEEL & WIRE COMPANY
208 South La Salle Street, Chicago
Empire State Building, New York

COLUMBIA STEEL COMPANY
Russ Building, San Francisco

United States Steel Products Company, New York,
*Export Distributors*

AMERICAN TIGER BRAND WIRE LINES

**ELECTRICAL WIRES and CABLES**

***We manufacture a complete line of Electrical Cables for the Oil Fields such as—***

**Amerclad All-Rubber Cords and Cables—Including Oil Proof and Oil Resisting types · Rubber Covered Wire · Reliance URC Weatherproof Wire · Motor Leads · Switchboard Wires · Geophone, Seismograph and Electrical Prospecting Cables.**

US STEEL

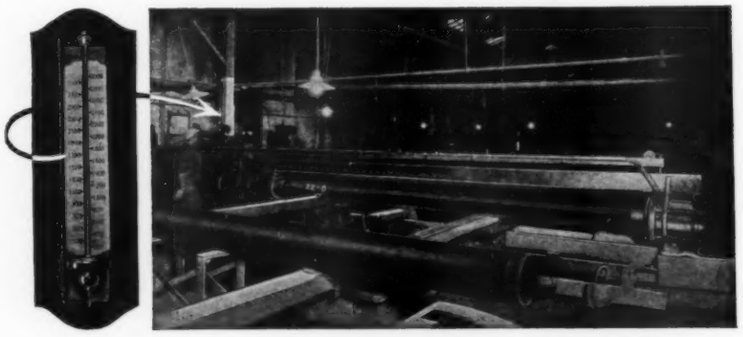
UNITED STATES STEEL

# TESTS that assure *long service* under severe conditions

*For many years we have been using tests that assure accurate workmanship and long service*

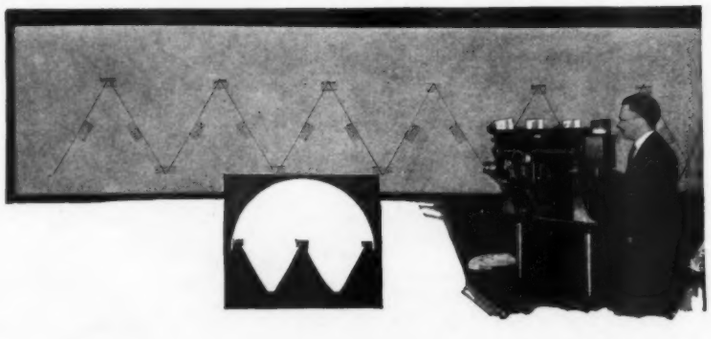
CAREFUL and exacting processes of manufacture and inspection *in the plant* assure unfailing service from Chester Casing, Pipe and Tubing *in the field*—where consistently dependable performance under severe conditions is fully appreciated.

Chester Products are as nearly perfect as modern machinery and experienced, skillful workmen can make them.



Chester uses mercury columns on its hydraulic testers, for the mercury column is as accurate as a thermometer.

An image of Chester threading, magnified 200 times, is thrown on a screen by means of a powerful projector. Frequent comparison of thread samples with a standard chart assures accurate and uniform threads.



**SOUTH CHESTER TUBE CO.**

**Chester, Penna.**

*District Sales Managers*

W. E. Gibson, 801 Columbia Bank Bldg., Pittsburgh, Pa.

J. P. Cooney, 715-716 A. G. Bartlett Bldg., Los Angeles, Calif.

J. P. Steele, Petroleum Bldg., Fort Worth, Texas.

*District Offices*

South Chester Tube Co., 1708 Hudson Terminal Bldg., 30 Church St., New York, N. Y.

J. D. Swartz, 608 Beacon Bldg., Tulsa, Oklahoma.

E. L. Moseley, 2218 Mills St., Houston, Texas.

Burt S. Shafer, Southwest Representative, 4313 Fairfax Ave., Dallas, Texas, or 603 Petroleum Bldg., Fort Worth, Texas.

*District Warehouses*

Houston, Texas; Thenard, Calif.; San Francisco, Calif.

*Distributors*

Western Supply Co., Tulsa, Okla., and Branches.

International Supply Co., Tulsa, Okla., and Branches.

Dunigan Tool and Supply Co., Breckenridge, Texas, and Branches.

Bridgeport Machine Co., Wichita, Kansas, and Branches.

Producers Supply and Tool Co., Marietta, Ohio; Fort Worth, Texas, and Branches.

Louisiana Supply Co., Sulphur and Brimstone, La.

Oil Field Equipment Co., San Antonio, Texas.

Okmulgee Supply Corp., Okmulgee, Okla., and Branches.

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Viking Automatic Sprinkler Co., 114 Sansome Street, San Francisco, Calif.

Herley Supply Co., 3006 Cherry Ave., Long Beach, Calif.

Barde Steel Co., Seattle, Wash., and Portland, Ore.

Star Drilling Machine Co., 550 Clinton St., Portland, Ore., and Akron, Ohio.

The Atha Supply Co., Zanesville, Ohio, and Mt. Pleasant, Mich.

United Pipe & Supply Corp., Charleston, W. Va., and Branches.

Bovaird & Co., Bradford, Pa.

Kane Supply Co., Kane, Pa., and Branches.

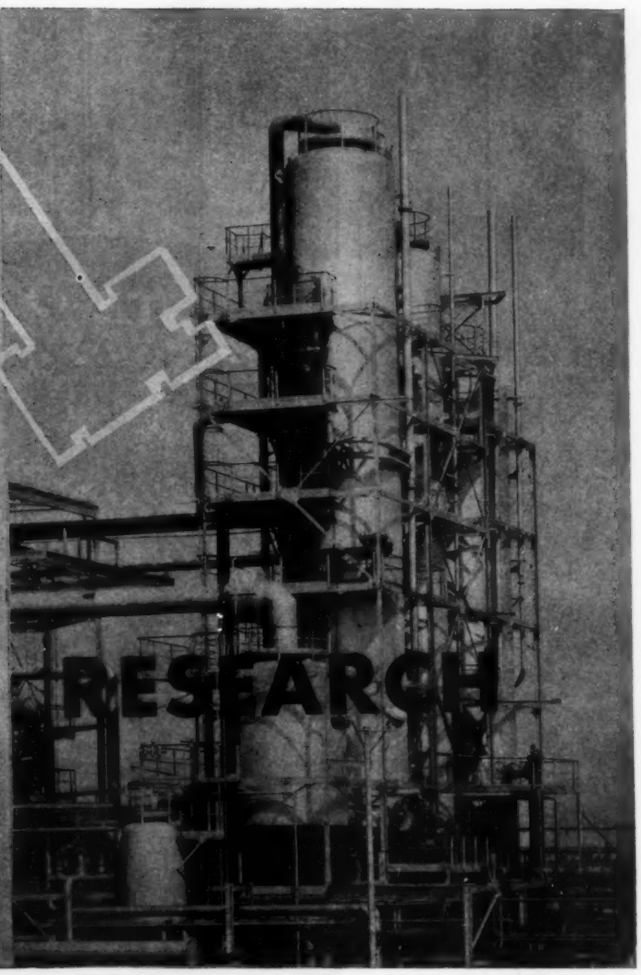
Prichard Supply Co., Mannington, W. Va., and Branches.

LeValley, McLeod, Kinkaid Co., Elmira and Olean, N. Y.

# CHESTER

**STEEL CASING AND LINE PIPE**

# The KEY to tomorrow's CRACKING PROFITS lies in today's TECHNICAL RESEARCH



Licenses granted under United States and Foreign Patents for: Cross · deFlorez · Holmes-Manley · Tube and Tank Cracking Processes · Uni-Coil Injection Process and Combination Cracking Units.

*Licensing Agents:*
THE M. W. KELLOGG CO.
Jersey City, New Jersey or its
*European Representative:*
COMPAGNIE TECHNIQUE DES PETROLES
134 Boulevard Haussmann, Paris, France

**Gasoline Products Company maintains an integrated program of research and development in the field of pyrolytic cracking in conjunction with several of the major refining organizations.**

**Together with the benefits of this continuous research and development work, licensees have the option to commute royalties for any desired annual gasoline capacity.**

**Before investing in cracking equipment consider carefully the advantages of an association with a licensing organization whose service is comprehensive enough to meet changing economic conditions.**

INJECTION UNI-COIL PROCESS

GASOLINE PRODUCTS COMPANY
INCORPORATED
11 COMMERCE STREET · NEWARK, NEW JERSEY

# TRET-O-LITE

The standard of comparison wherever crude oil is treated to pipe line requirements.

## TRETOLITE COMPANY

**MANUFACTURING CHEMISTS**

**DALLAS** **SAINT LOUIS** **LOS ANGELES**

***Representatives in all Principal Fields***

## SEVENTEENTH ANNUAL MEETING A. P. I., CHICAGO, ILL.

NOVEMBER 9th-12th, 1936

### Special Train via Frisco-Alton Railroads

THE SPECIAL TRAIN will leave Tulsa 3:00 P. M. Sunday, November 8th and arrive Chicago Union Station at 7:45 A. M., Monday, November 9th.

*Equipment furnished will be AIR-CONDITIONED and of the latest type and design, affording every travel comfort.*

The FRISCO-ALTON Railroads have reserved a block of rooms at the STEVENS HOTEL, which can be assigned our patrons at the time railroad reservations are made. A special registration desk will be provided at the 8th Street entrance, where our party will be given the keys to their rooms on arrival, thus eliminating the usual delay in room assignment.

*For further information, pullman or hotel reservations, please call or write Frisco Lines, Philcade Building, Telephone 3-3151.*

P. F. ATKINSON
Division Passenger Agent

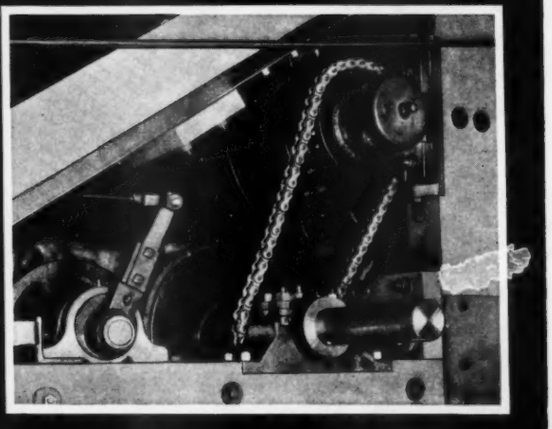
L. A. DAVIS
District Passenger Agent

J. E. PAYNE
Traffic Manager

FRISCO LINES

THE ALTON RAILROAD COMPANY — CHICAGO ST. LOUIS KANSAS CITY — THE ONLY WAY





## CHAIN-DRIVEN SAND REEL

The chain-driven sand reel on STAR SPUDDERS provides a sturdy, positive drive in all kinds of weather. It is mounted on self-aligning ball bearings and uses an alloy air-cooled brake with lined band—the best possible brake for deep wells and heavy duty. Before you buy a Spudder get all the facts on Star Performance. The Star Drilling Machine Co., Akron, Ohio. Branches: Chanute, Kansas; Wichita Falls, Texas; Portland, Oregon.

## STAR DRILLING MACHINES



# 11 NEW SEDANS...220 PHILCO RADIOS...550 BOXES OF REAL SILK HOSIERY *and* 550 SPALDING OFFICIAL FOOTBALLS...

Mrs. Berenice Bichler, winner of a new car in the first week's contest.

Those are the prizes that Sinclair is giving away to winners in the Sinclair-"Red" Grange Football Radio Contest. But the biggest winners are Sinclair distributors, jobbers and dealers. Their prizes are more customers . . . more sales . . . bigger profits.

Here are some typical examples. James R. Middaugh, of Harrisburg, Pa. says, "The Football Contest is making touchdown after touchdown in my sales record book." O. G. Temme, Vice President and General Manager of the North Loop Garage in Chicago, says, "It is the greatest thing any oil company has ever done in the way of helping garage men and service station operators to secure business." And that goes for distributors and jobbers, too.

Why don't you get full details of the value of the Sinclair franchise? 'Phone the local Sinclair office or write to Sinclair Refining Company (Inc.), 630 Fifth Ave., New York City.

50 boxes of half-dozen pairs of Real Silk Hosiery are given away each week.

Each week Sinclair gives away 20 of these Philco Auto Radios, as well as 50 Spalding Official Footballs, autographed by H. F. Sinclair and "Red" Grange.

PURPLE STRAND
WILLIAMSPORT
PURPLE STRAND
Form-Set
Some fellow once said "You get what you pay for". A good phrase but not always true except when buying Williamsport Wire Lines.
The Telfax System of grade marking, exclusive with Williamsport, has been a "Godsend" to users who have heretofore had extreme difficulty in checking the quality of steel used in various grades of lines of other make.
To those whose operations can use Preformed Wire Lines we offer our Purple Strand "Form-Set" with full confidence that the extra service it will render makes its use one of great merit and outstanding economy.
WILLIAMSPORT WIRE ROPE CO.

WILLIAMSPORT, PA. » » 122 S. MICHIGAN AVE., CHICAGO, ILL.

OTHER OFFICES IN ALL PRINCIPAL CITIES

*Oil Country Sales Offices:* Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla.; 10 North Milby Street, Houston, Texas. Mid-Continent Supply Co., Distributors in Texas, Louisiana and Arkansas. General Machine & Tool Company, Distributors in Kansas. American Pipe and Supply Company, Distributors in the Rocky Mountain Territory.

# TIMKEN Announces

★

## A Series of Silicon-Chromium-Molybdenum Steels Notable For High Temperature Strength and Exceptional Resistance to Corrosion and Oxidation . . .

**SICROMO 1**

**SICROMO 2**

**SICROMO 3**

**SICROMO 5**

These SICROMO Steels contain 0.50% Molybdenum and high silicon in combination with different amounts of chromium as indicated by the grade numbers. These numbers represent the mean chromium content of the alloy.

The development of the Timken Sicromo series is the result of the great success of Timken DM Steel—the first silicon-chromium-molybdenum alloy for general high temperature use. During 4 years of service Timken DM has definitely demonstrated the need for other alloys of this type.

There are many tube applications involving various conditions of corrosion and oxidation for which SICROMO Steels are particularly suitable. SICROMO 1, 2 and 3 should be selected for intermediate service and SICROMO 5 for the most severe conditions of corrosion and oxidation. Your inquiries will receive prompt attention.

GOOD WILL BASED ON GOOD STEEL

THE TIMKEN STEEL & TUBE COMPANY, CANTON, OHIO

*District Offices or Representation in the following cities:* Detroit Chicago New York Los Angeles Boston Philadelphia Houston Buffalo Rochester Syracuse Tulsa Cleveland Erie Dallas Kansas City St. Louis Cincinnati Huntington Pittsburgh Minneapolis

*World's Largest Producer of Electric Furnace Steel*

# TIMKEN STEEL TUBES

ELECTRIC FURNACE AND OPEN HEARTH • ALL STANDARD AND SPECIAL ANALYSES

DEPARTMENT OF GEOLOGY
THE UNIVERSITY OF NEBRASKA

**NAPHTHAS** **FUEL OILS**

**DIESEL OIL** **KEROSENE**

**GASOLINE** **INDUSTRIAL**

**AUTOMOBILE LUBRICANTS**

**BRIGHT STOCKS**

*Nine strategically located Shell Refineries* — Arkansas City, Kan. Coalinga, Cal. • Dominguez, Cal. • East Chicago, Ind. • Houston, Texas Martinez, Cal. • Norco, La. • Wilmington, Cal. • Wood River, Ill.

# TNEMECIZE

WITH TNEMEC—FASTEST SELLING—MOST DURABLE PROTECTION FOR ALL OIL FIELD EQUIPMENT AND PROPERTY

THERE IS A SPECIALIZED TNEMEC PRODUCT FOR EVERY OIL FIELD PURPOSE

## PARTIAL LISTING OF TNEMEC USES

**FOR LEASE HOUSES** and **All Wood Buildings** — TNEMEC wood formulae (all colors) hold their color and are not affected by sulphur gases.

**FOR BOILERS, STACKS** and **Hot Surfaces**—TNEMEC No. 86 H. S. Black; TNEMEC No. 87 Smoke Stack Black and TNEMEC No. 0260 H. S. Aluminum.

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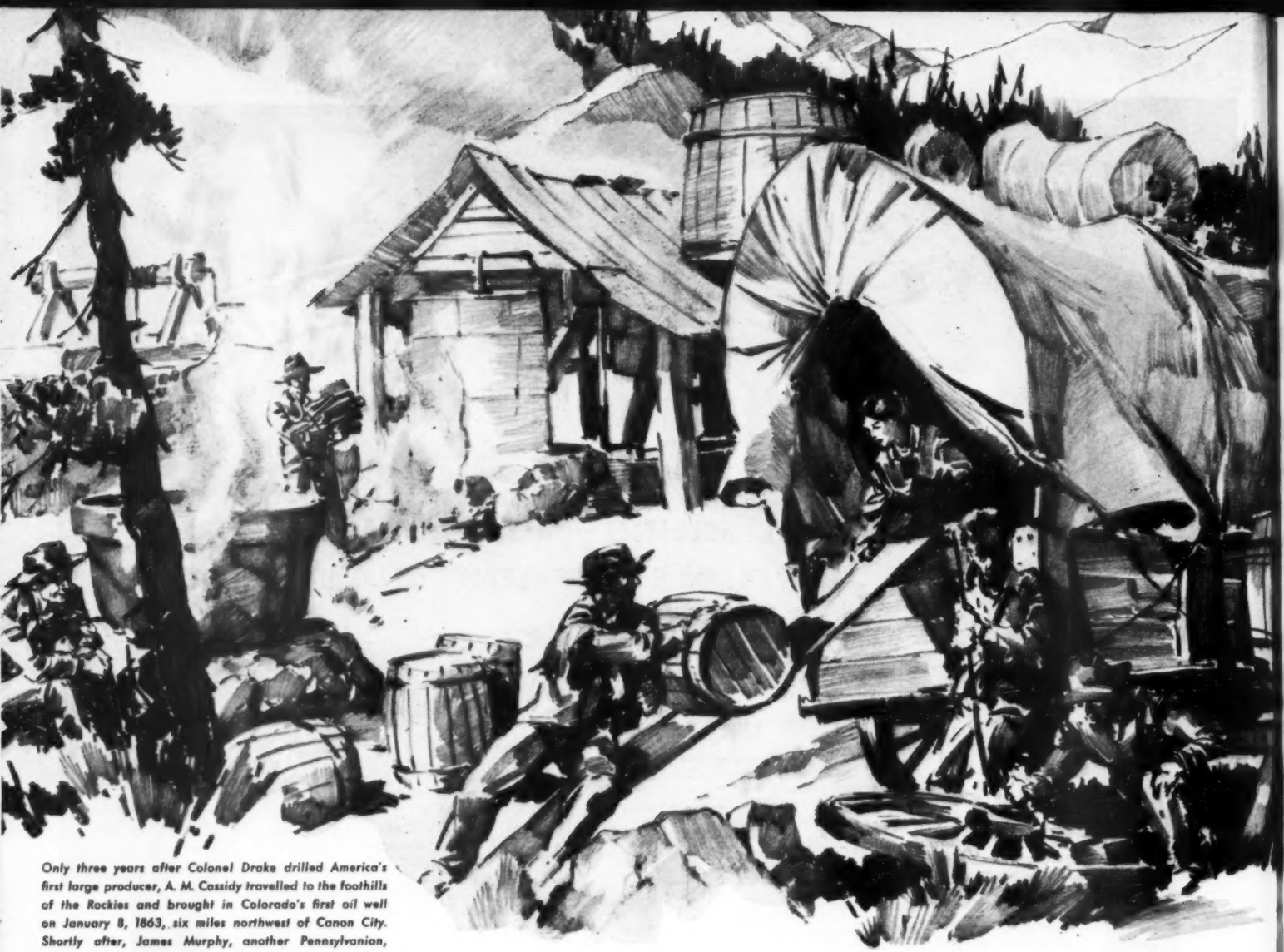

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NOVEMBER 5, 1936
VOL. 35, NO. 25

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HANLON-BUCHANAN EXTRA

# Front Page News

FINAL

THURSDAY, NOVEMBER 5, 1936

# LANDSLIDE FOR STA-VOL-ENE

## MID-CONTINENT SOLID WITH 124 VOTES

## STA-VOL-ENE LEADS IN

NOVEMBER 5, 1936—(H-B) Voter
Greatest Landslide in the
History of Natural
Gasoline

## STA-VOL-ENE SWEEPS GULF COAST

## 88 VOTES

## FOREMOST NATURAL GASOLINE OF ALL TIME

## WEST COAST 59 VOT

## 500 OF A POSSIBLE 531 ELECTORAL VOTES FO

## STA-VOL-ENE

## America's Answe Equaled in Foreign Market

NOVEMBER 5, 1936—(H

## EUROPEAN MARKETS CAST MAJORITY WITH 93 VOTES

EUROPEAN CABLE—(H-B) Today's Landslide for STA-VOL
All Foreign Capitals NATURAL GASO
in Choosing

## WEST COAST 'Off Specification' Natural Gasoline One Vote

Landslide in t
Natural

## EAST COAST CASTS 136 VOT

ORDINARY NATURAL GASOLINE GETS BUT 30 VOTES

STA-VOL-ENE SWEEPS

MID-CONTINENT SOU


OVER A QUARTER OF A CENTURY
IN THE NATURAL GASOLINE INDUSTRY!

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# Demand for Fuels Brings Crude Raise

THE most important price changes since the general increases of last January, materialized Monday, November 1, when buyers led by the Humble Oil and Refining Company posted 5 cent advances in four fields of southwestern and northeastern Texas. The crudes affected were the heavy oils produced in Saxet, Refugio and other pools which were advanced to 95 cents. Heavy crudes of the Mirando type in Duval, Jim Hogg and other fields were advanced to 90 cents. The new Talco price is 65 cents. The Humble company also announced prices in six Texas fields in which it previously had not posted schedules. The Ohio Oil Co., effective November 1, reduced Rock Creek, Wyo., crude 3½ cents to $1.08½.

The advances in the southwestern fields are said to be largely due to the improved demand and higher prices for all grades of fuel oil at Gulf Coast and East Coast points. The refinery fuel market at Gulf terminals has been gaining strength for several weeks. The crudes advanced are low in gravity, and in refinery operations they give large yields of overhead and residual fuels. The price increases have raised the question of whether or not other advances will materialize in the posted schedules for low-gravity crudes. Present postings in a majority of the fields of southwestern states give a 2-cent differential for each degree of gravity with minimum prices of 60 to 80 cents for the lower gravities. A heavy demand for fuels, which now seems assured for the winter months, will increase the refining value of these heavy grades in relation to the higher-gravity gasoline crudes and it is believed additional price adjustments may materialize.

**Production 3,041,526**
**Decrease 46,359**

A 21,675-barrel reduction in the daily production of Oklahoma and a 38,075-barrel decrease in California more than offset the increases of some of the other states so that national production for the last week in October was down 46,359 barrels daily from the all-time peak output of the previous week. The output was still 200,000 barrels daily in excess of the Bureau of Mines recommendations.

It is assumed additional decreases will materialize in the report next week covering the first week in November. Proration officials in Texas, which produced approximately 1,200,000 barrels daily through October, a figure which was greatly in excess of bureau recommendations, have agreed to cut November production to 1,109,300 barrels. The November allowables of some states will be higher than in October, with an increase of 28,000 barrels daily in the bureau's recommendation due to the fact that no provision is made for a reduction in stocks. Despite the heavy October output, crude markets generally ended the month in a firm position, with active solicitation of new connections by buyers reported in the Mid-Continent. Gasoline prices are steady.

## Daily Average Production for Week

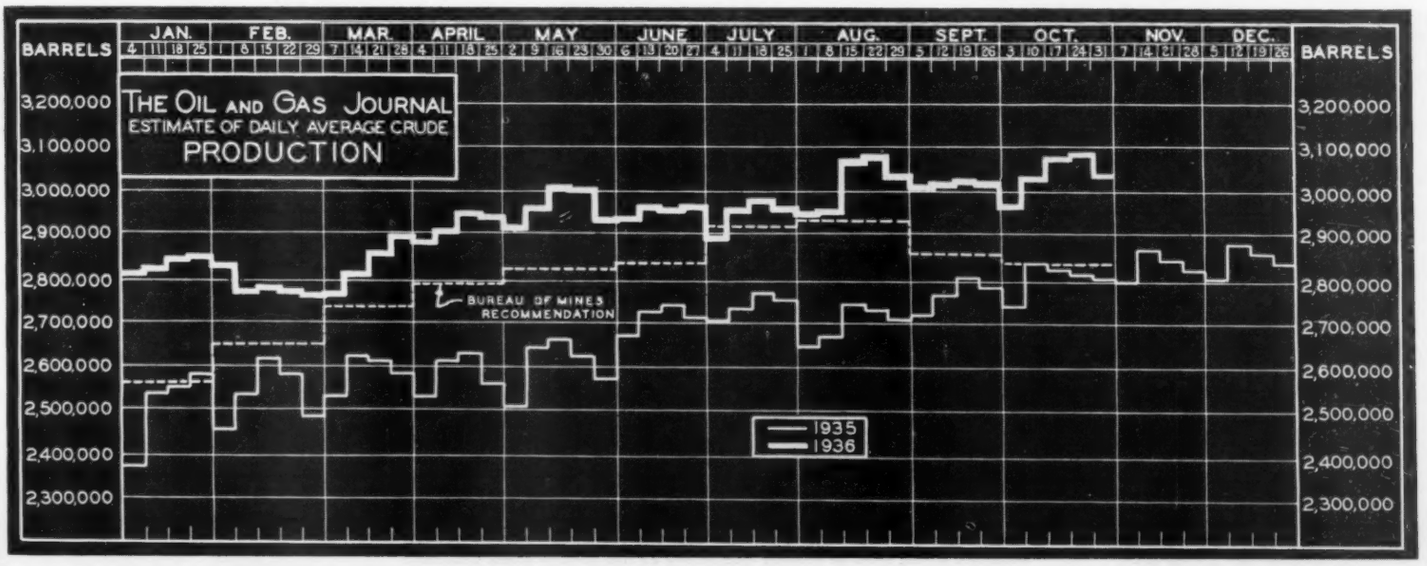
| | Oct. 31, 1936 | Bur.Mines Oct. est. | Oct. state allowables | Oct. 24, 1936 |
|---|---|---|---|---|
| Oklahoma City | 139,750 | ..... | ..... | 151,200 |
| Seminole-St. Louis | 94,125 | ..... | ..... | 96,350 |
| Remainder of State | 330,875 | ..... | ..... | 338,875 |
| Total Oklahoma | 564,750 | 559,900 | 559,900 | 586,425 |
| East Texas | 444,650 | ..... | ..... | 446,587 |
| West Texas | 179,400 | ..... | ..... | 178,847 |
| North Central Texas | 89,800 | ..... | ..... | 86,197 |
| Texas Panhandle | 65,887 | ..... | ..... | 64,850 |
| East Cen'tral Texas | 71,100 | ..... | ..... | 71,549 |
| Gulf Coast—Texas | 263,083 | ..... | ..... | 265,996 |
| Southwest Texas | 85,100 | ..... | ..... | 85,796 |
| Total State of Texas | 1,199,020 | 1,106,900 | 1,179,948 | 1,199,822 |
| North Louisiana | 75,435 | ..... | ..... | 76,125 |
| Gulf Coast—Louisiana | 157,800 | ..... | ..... | 157,550 |
| Total Louisiana | 233,235 | 189,300 | 235,200 | 233,675 |
| Santa Fe Springs | 44,500 | ..... | ..... | 43,900 |
| Long Beach | 65,350 | ..... | ..... | 65,400 |
| Kettleman Hills | 78,550 | ..... | ..... | 79,300 |
| Remainder of State | 379,700 | ..... | ..... | 395,900 |
| Total California | 568,100 | 535,300 | *544,000 | 584,500 |
| Kansas | 163,425 | 155,000 | 155,000 | 168,575 |
| Arkansas | 28,110 | 29,600 | ..... | 28,160 |
| Eastern Fields | 114,000 | 106,300 | ..... | 114,200 |
| Michigan | 31,176 | 30,000 | ..... | 30,448 |
| Southeastern New Mexico | 77,930 | 73,100 | 81,555 | 77,970 |
| Rocky Mountain area | 61,780 | 56,900 | ..... | 64,110 |
| Total United States | 3,041,526 | 2,842,300 | ..... | 3,087,895 |

*Recommendation of Central Committee of California Oil Producers.

## Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATE)

| | |
|---|---|
| Week ending October 17, 1936 | 292,538,000 |
| Week ending October 10, 1936 | 292,701,000 |
| Week ending October 19, 1935 | 318,529,000 |



# SPARKS FROM THE NEWS

**Answer**

Several Oklahoma wildcats approaching the important test stages will shortly determine whether the Sooner state is to have new crude supplies next year.

**Detonation**

The trouble with cheap gasoline is too many knocks—in the engine and from the motorist.

**Hard Fact**

Granite can be used in many places, but not in the bottom of a wildcat well.

**Sign**

Solicitation of new crude connections by buyers who previously had been content to draw on storage indicates their inventories have been reduced to minimum working requirements.

**Rainbow**

Decision by the I.C.C. to bring valuation data up to date before deciding on rate changes is the first break pipe line operators have had in some time.

**Forgotten Fields**

Major companies are quietly applying modern engineering in old fields which were haphazardly developed in the boom days and they are recovering much oil left by the old system. Real conservation.

**No Fable**

The smaller the group the louder they "holler" to create an impression of importance. Like the frog that blew himself up.

**Personal**

Analyses of the Social Security Act indicate the security may be confined to the jobholders who administer it.

**Reward**

Third-quarter earning statements make pleasant reading to those who held on to common oil stocks through several lean years.

**Desire**

A look at the new model cars will end any doubt as to the continued expansion in gasoline demand next year.

**Marginal Note**

The margin in marginal wells apparently has something to do with the margin of profit.

**Phenomenon**

Natural gasoline manufacturers enjoy the unique position of increased production and high prices.

**Proof**

The numerous refiner-jobber contracts of many years' standing show that agreements can be worked out on a satisfactory basis.

**Record**

Refinery expansion programs under way or planned represent preparations for another record-making demand for finished products in 1937.

LATEST IN CONDUCTED TOURS

—Standard Oil Bulletin

***Caravan of cars consuming petroleum products led by government ranger-naturalist giving talks on geology and botany on trip through scenic California***

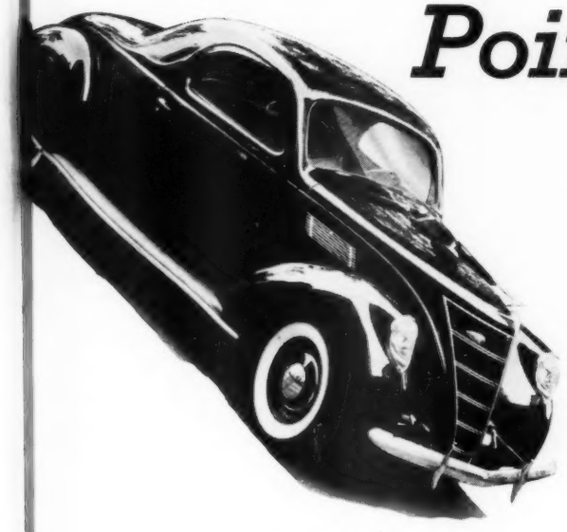
**Oddity**

Strange oil should be found rather than gas under the Oklahoma state capitol.

**Recognition**

Heavy crudes are coming into their own. They yield more fuel oils and more charging stocks for cracking operations.

# 1937 Automotive Program Points to Record Gasoline Demand



By C. O. WILLSON

DETROIT, Mich., Oct. 30.—The feverish activity everywhere apparent in this center of the motor-car industry supports the prediction of petroleum statisticians that 1937 will bring a 6 to 9 per cent increase in the demand for gasoline.

As manufacturers complete plans for introduction of new models, prophecies are general that the production records of the highly satisfactory motor year now being brought to a close will be exceeded next year by 10 per cent or more. Conservative statisticians, whose predictions at the start of the three previous years have been below the actual production, are expecting sales of at least 5,000,000 passenger cars and trucks in the United States and Canada the coming year.

If this prediction materializes it will be the biggest year in the history of the motor industry with the exception of 1929. The more optimistic believe the 5,621,715 output of that year will be exceeded.

Following are additional data made available by manufacturers covering the United States and the neighboring Dominion which will be of interest to those attempting to estimate their motor fuel and crude oil requirements for next year:

With two months yet to go, it is certain the motor vehicle output for 1936 will total in excess of 4,600,000 units, the largest yearly output with the exception of 1929.

The 1936 output of trucks, which includes buses and other commercial vehicles, which are the largest consumers of gasoline per unit, will exceed any previous year, representing close to 20 per cent of the total production.

There will be more than 27,000,000 cars and trucks registered in the United States at the close of the year, the largest registration in the record of the industry.

The production and registration data for the rest of the world are even more impressive from a percentage angle than are those of the United States and Canada. A new peak in production will be established in foreign countries and in world registrations at the close of the year.

Thus at the start of 1937 more motor vehicles will require fuels and lubrication than on the corresponding date of any previous year, with several hundred thousand additions to be made monthly in the form of new cars throughout the new year. Aside from these numerical comparisons in arriving at probable motor fuel requirements in this and other countries, it is necessary to take into consideration several other consumption factors, including the increased requirements per unit so apparent in the demand data of this year.

Oil company statisticians with these data in mind are expecting the increased demand for motor fuels in the United States in 1937 will be approximately 1,500,000,000 gallons in excess of the 1936 domestic consumption. Interpreted in terms of crude oil it will mean an increased supply of at least 200,000 bbls. daily. Canada in the past has obtained a large part of its crude and refined product requirements in this country so the expected gain there next year will be reflected in the export requirements here. No attempts have been made so far to estimate the probable participation of the United States in the oil markets of other foreign countries which in most cases will also expand in 1937.

### BETTER FUELS

It is apparent that the motor industry will not only require more fuels, but the trend toward better fuels is to continue. While complete data will not be available until the opening of the New York show on November 11, information on models already released show the average compression ratio for the entire industry will be higher than a year ago in line with the requirements of greater power and speed.

Most of the new engines, some of which involve important changes in design, will presumably be expected to operate satisfactorily with the regular 70-octane motor fuels sold by practically all of the important oil companies. In the engineering departments one hears statements to the effect that the higher compression ratios have been compensated for by changes in combustion chambers, cooling, valve arrangements, spark adjustments and other features of engine design so no changes of the octane ratings of fuels will be necessary.

Other sources of information indicate for certain models manufacturers will return to the practice of several years ago and suggest the use of premium Ethyl grades with the minimum octane rating of 76. In this connection it is known certain oil companies will step up the minimum octane rating of their premium Ethyl grade to 80. These companies have exceeded the minimum of 76 for some time and now have reached the point where they are in a position to market 80-octane material with the expectation the new cars will provide additional outlets.

It is no secret here some of the 1936 models have not been entirely knock-proof with the regular grade gasolines ranging from 68 to 70 octane although practically all manufacturers recommended their use. Part of the trouble apparently is due to the fact the C.F.R. method of testing for anti-knock properties does not in all cases give a satisfactory correlation with road tests which are the motorist's and manufacturer's method of determining performance. This situation and the trend toward higher compression ratios, coupled with the ability of refiners to meet 70-octane specifications more easily, due to the expansion of their cracking and reforming operations, has led to the prediction that the octane ratings of the regular motor grades will shortly be stepped up two or more numbers. The third-grade gasolines, so far as the 1936 and 1937 cars are concerned, are definitely outlawed. The low-octane ratings of practically all these competitive fuels have been the source of complaints from owners of new cars during the present year.

The car manufacturers appear more satisfied than ever with the motor oils furnished by marketing companies in the present year and no important changes in their recommendations for the 1937 cars are anticipated. It is said the early troubles experienced with some of the solvent refined oils have been cleared up and comments were generally favorable regarding the performance of these oils.

The service troubles with these motor oils centered in the corrosive action with certain new alloys which the manufacturers were using. Some of these alloys have been dropped and oil companies have also been able to remove the objectionable properties of their oils. Complaints regarding the oils developed due to the removal of certain inhibitory properties in the oils which were removed in the solvent refining operation. This problem is being solved through the retention or addi-

*(Continued on Page 26)*

# Mid-Continent and California Operators Battle in Rockies

By L. G. E. BIGNELL

**Mr. Bignell has just completed a 4,500-mile tour of the active oil regions in the Rocky Mountain area. This is the first of a series of articles.**

The vast Rocky Mountain region, summer playground of the nation, a large and rapidly increasing potential user of petroleum products because of the building of long stretches of oil-surfaced roads, is coming into its own as an oil-producing area.

Major and independent operators have been quietly at work in the four states comprising the Rocky Mountain group and have done extensive geophysical work and leased millions of acres. The numerous structures now mapped, and many areas where the geologist believes stratigraphic traps exist, will come in for an active drilling campaign.

The second oldest oil field in the United States is near Florence, Colo., and the Cut Bank oil and gas field in northern Montana now exceeds the East Texas oil field in area, having more than 70,000 acres of productive oil land and between 60,000 and 70,000 acres of gas reserve. The oil reserve is estimated at 280,000,000 bbls. and the gas reserve in excess of 300,000,000,000 feet.

In Wyoming there are more than 400,000,000 bbls. of black oil reserve suitable for making high-grade gasoline by cracking and the residue furnishes road oil. This road oil is finding a market in this region where long stretches of oil-surfaced roads are being built and as they are completed gasoline consumption will be increased proportionately. Outside of this region there is an ever growing demand for road oil and about 22 states are now interested in oil roads.

Fuel is another important product in demand in that section and natural gas developed locally is always in demand. At Cut Bank, Montana, the Montana Power Gas Co. natural gasoline and gas dehydrating plant is producing 5,000 gallons of butane which is being shipped to Spokane, Wash., where all buses are operated on this type of fuel.

Within the confines of the Rocky Mountains there are many millions of acres of federal and state land. The federal land has been open for prospecting under a permit system until the enactment of the O'Mahoney-Greever bill during the last session of congress. Under the provisions of this act these permits expire December 31, 1937, and if the land has not been prospected by that time the mineral rights will revert to the government. The new law has caused considerable difference of opinion as to its effect upon prospecting for oil and gas on federal land but it seems apparent that land lying over good structures will receive attention in due course regardless of legal complications. State lands in each state come under local regulations and the revenue from the sale of gas and oil produced from wells on this kind of land is used for the support of various state institutions. This leads to cooperation between state officials and the oil companies.

### COLORADO

A review of the activity in each of the various states indicates that in Colorado the development in the eastern part of the state will be graduated according to the showings in test wells now being drilled. There are more than 4,000,000 acres under lease in eastern Colorado divided into 36 blocks ranging in size from 4,000 to over 1,000,000 acres each. These leases represent an investment of more than $12,000,000 in bonuses and will require the payment of about $1,500,000 per year for rentals. In addition to this expense about $750,000 has been spent for geophysical work alone and it is reasonable to assume that with this large sum of money invested and obligated the oil companies will proceed with the development of their leases as needed.

There is only about 3,600 bbls. of refinery capacity now operating in Colorado and part of the oil run is coming from Wyoming and Texas Panhandle. The daily production from the 205 wells in the state is about 5,000 bbls. but about 3,200 bbls. of this oil is being shipped into Utah where there is no oil produced at this time. The average daily demand for gasoline the year round in Colorado is about 500,000 gallons with peak demand greatly exceeding this during the tourist season, from May until late in October.

### WYOMING

In Wyoming a much larger supply of crude oil has been developed in the past, with the Salt Creek field leading all Rocky Mountain fields in size and quantity of production. The Salt Creek field has long passed its peak of development, but with the discovery of oil in the Sundance formation in Lance Creek and Medicine Bow fields it is probable deeper producing formations may be developed in the Salt Creek field. The discovery of the Sundance, and also the Tensleep oil producing horizons, has created renewed interest in the possibilities of finding these formations productive in other areas within this state and it is predicted deep wells will be drilled upon many of the more than 50 structures in the state now outlined by geology. In the Lance Creek field the development of the Sundance sand has caused a revival in drilling and at the present rate of completions it will be several years before this area is drilled up. A new pipe line with about 5,000 bbls. daily capacity has been laid out of this field to the main trunk line of the Stanolind Pipe Line Co. and will afford an outlet for this oil into eastern markets when the demand for it is created. It is a very desirable oil and as the Lance Creek field is located upon the edge of a great basin high hopes are entertained by many independent operators of finding similar production on other structures located around the rim of this same geological feature.

Wyoming is better equipped with refinery capacity than Colorado, or Montana, and with the vast reserve of black oil now developed in the northern part of this state it is probable many of these refineries will be operated to larger capacities in the future, especially as the demand for the road oil to be made from the black oil develops.

### MONTANA

Montana should be divided into two distinct oil areas. Along the southern boundary the refineries draw upon Wyoming black oil for their supply and where these refineries are equipped with cracking facilities it is reported as much as 50 per cent 70 octane number gasoline is being produced. The northern fields are adjacent to Canada and are influenced largely by Canadian demand. Their future development will be regulated by the extent of the new discoveries in the western part of the Turner Valley field. Three wells of much importance to the Canadian oil industry are now being completed in west Turner Valley field and if they secure oil in like proportions to that found in the first well completed in that part of the field it will cause a number of additional wells to be drilled soon and as they come on production demand for oil from Montana will be correspondingly reduced. The first well to be completed in the west Turner Valley field is reported to have had a capacity of about 865 bbls. of very high grade oil, not naphtha, per day, and if wells of this capacity can be found in this area it will mean much to the Canadian industry.

There is a vast area still to be explored on the Sweetgrass arch of northern Montana and southern Canada and if the Cut Bank field is extended north as predicted it will become an important reserve area. Recent developments have outlined the southern limits of the Cut Bank field as bounded by the Marias River but the field is about 27 miles long from north to south and varies in width from 2 to 7 miles from east to west. It is possible for this shoreline condition to continue for 25 or 30 miles to the north and development now extending westward from the Kevin-Sunburst field may prove the existence of a large additional crude oil reserve along the west flank of the Sweetgrass arch.

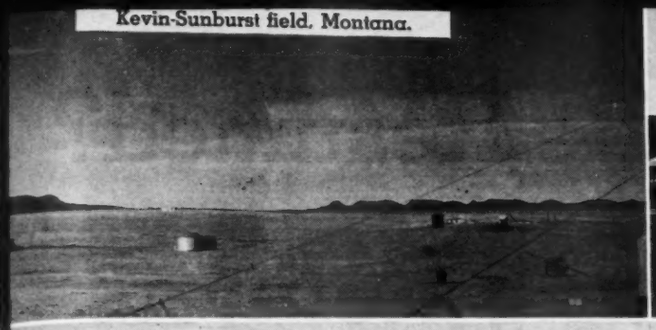
With the possibilities of demand for crude being cut off from Canada and with the need of additional crude in California it is probable a main oil trunk line may be laid over the mountains to the Columbia River valley and then to the coast of the Pacific Northwest. From this terminal the oil could be handled by tankers to California refineries and the finished products distributed in the California trade area. There is also a large trade area east of Montana without local supply which may be supplied by a gasoline line running from refineries in the northern Montana fields.

### UTAH

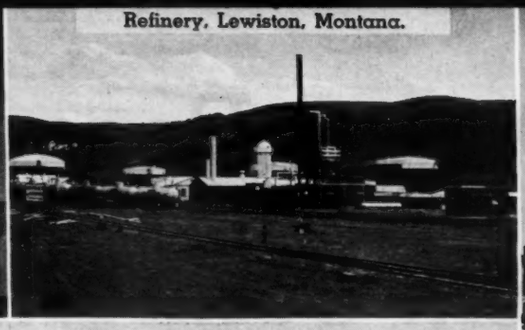
Utah is another of the western states where there has been much exploration for oil. About 130 wells have been drilled in this state without finding any pools of importance. There are now several important tests being drilled in the eastern and central part of Utah and if they strike oil in commercial quantities there are two local refineries at Salt Lake City which will secure their crude from those sources. Others may be built for some of the major California companies are financially interested in some of these tests and own leases on large areas of land for gas and oil exploration. Utah's future oil supply will probably come from pools of the stratigraphic trap type and this may necessitate drilling of several exploratory wells to find these "hidden pools" but this type of work is now well under way with encouraging showings.

While Nebraska cannot be classified as a Rocky Mountain state there has long existed a desire to find oil in commercial quantities within its boundaries. Four important tests are now being drilled in the west central part of the state and with the knowledge gained by the drilling of other wells in the past it is probable pools of commercial importance may be opened in Nebraska in the near future.

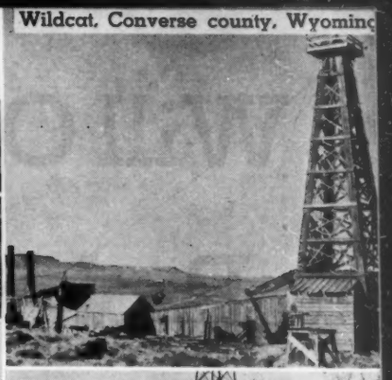
The 55-mile long Baker-Glendive structure in eastern Montana and western North Dakota has attracted favorable attention and one well in Montana has been completed which appears to have commercial possibilities and two more have been started. Finding gas or oil on this structure will mean much to the region east of Montana.



Kevin-Sunburst field, Montana.

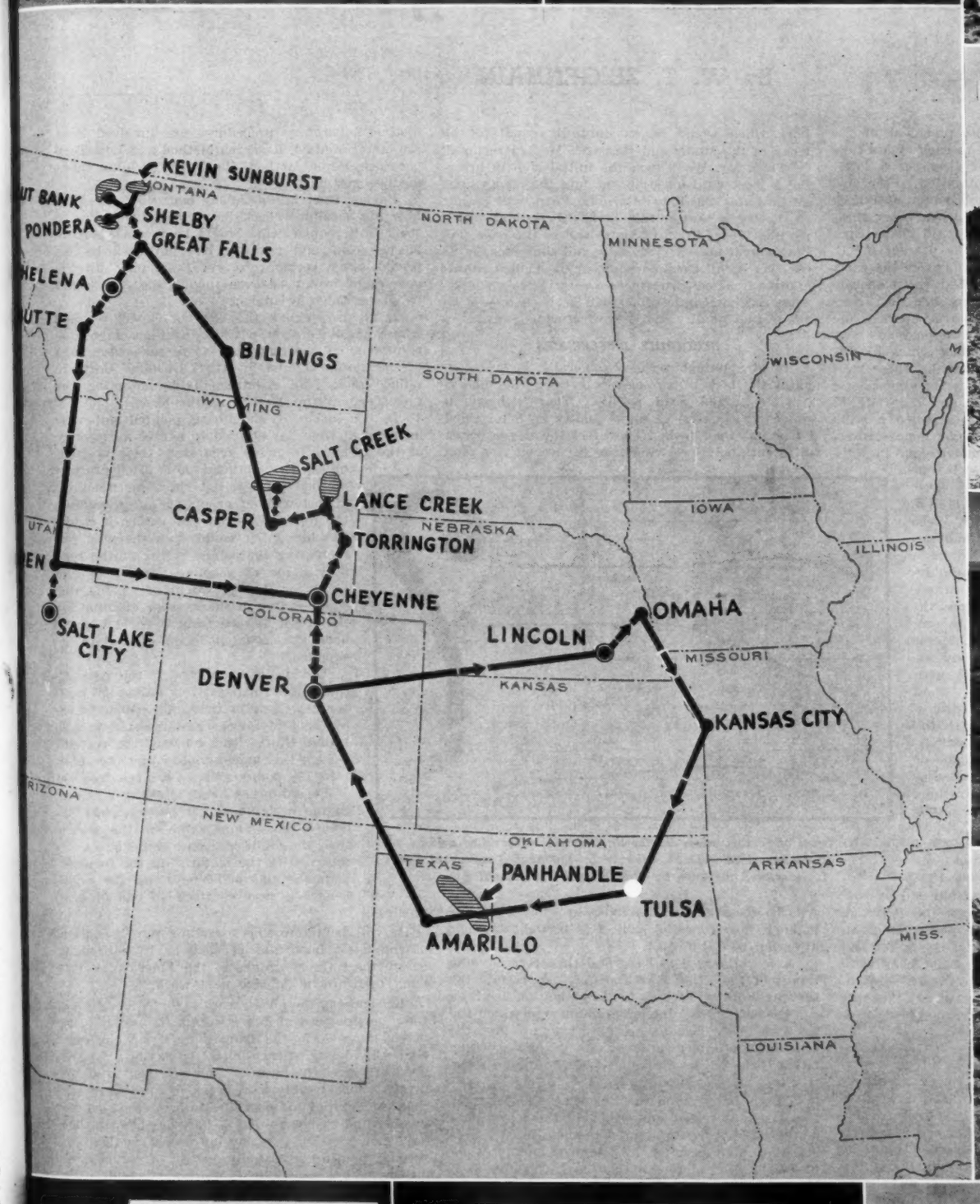


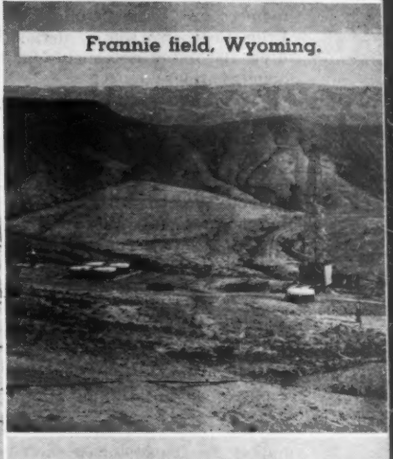
Refinery, Lewiston, Montana.



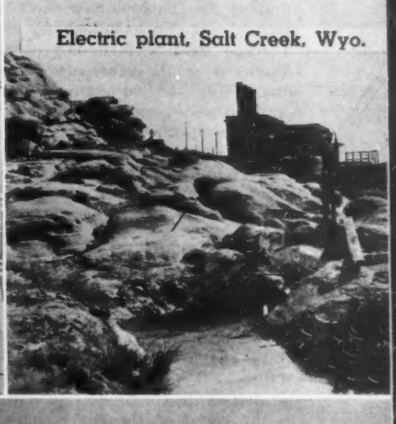
Wildcat, Converse county, Wyoming

Lance Creek field, Wyoming.



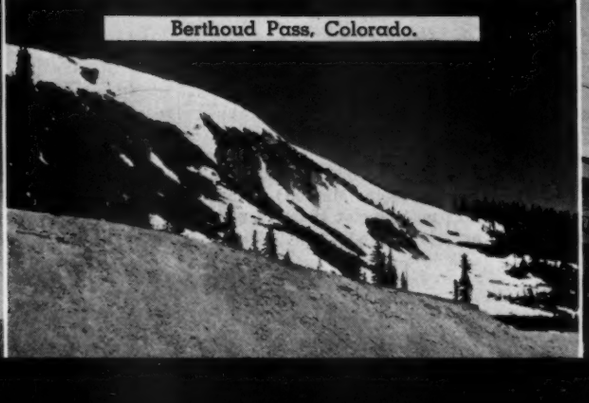



Frannie field, Wyoming.



Electric plant, Salt Creek, Wyo.

Buckingham field, Colorado.



Berthoud Pass, Colorado.

Main street Midwest, Wyoming.

# Will Octane Race Be Resumed?

# Problem Confronting Refiners

By W. T. ZIEGENHAIN

E. W. Webb, president of the Ethyl Gasoline Corp., has sent to each of his company's refinery and marketing licensees a lefter and report in which he calls attention to the lack of agreement between laboratory motor antiknock test results and those witnessed when using these same gasolines in representative 1936 model cars. He traced the development of the present C.F.R. motor method of knock testing and from the early Research Method briefly described the elaborate series of road tests his company had just completed in which 22 1936 model cars had been operated for a period of three months on roads near San Bernardino, Calif., and during which 35 different motor fuels were investigated. These road tests were made under three ranges of atmospheric temperature, namely 65 to 87° F. and 87 to 113° F. This location was chosen as it supplied a wide differential between day and night temperatures.

Later similar tests were undertaken in July and August in Tulsa, during which time runs were made when the atmospheric temperatures ranged from 87° to 113° F. From these two sets of data Mr. Webb drew the following conclusions and recommendations:

"Road knock ratings made on the average 1936 model car at high atmospheric temperature correlate on the average quite satisfactorily with laboratory ratings made by the C.F.R. Motor Method. Road ratings made at low atmospheric temperatures correlate with C.F.R. Research Method ratings. Road ratings made at intermediate atmospheric temperatures correlate with the mean of the Motor and Research ratings.

"The Research Method ratings of commercial gasolines may be substantially equal to the Motor Method ratings or as much as nine octane numbers higher.

"The present maximum of 70 octane number by the Motor Method for lead-treated regular gasolines penalizes the average road performance of gasolines having a small difference between the Research and Motor Method ratings. The provision of an optional maximum for the mean of the Motor and Research Method ratings, provided the mean were of the proper magnitude, would insure substantially equal average performance of all types of fuels under the usual range of atmospheric conditions.

### COMPANY RECOMMENDATIONS

"In the interest of simplification of laboratory procedure, it is desirable that in the determination of the mean rating there be substituted for the Research Method determination one which requires as few deviations as possible from the Motor Method conditions. In particular, mechanical difficulties in connection with frequent changes in the speed of the C.F.R. engine for Motor and Research ratings make desirable the use of a speed of 900 r.p.m.

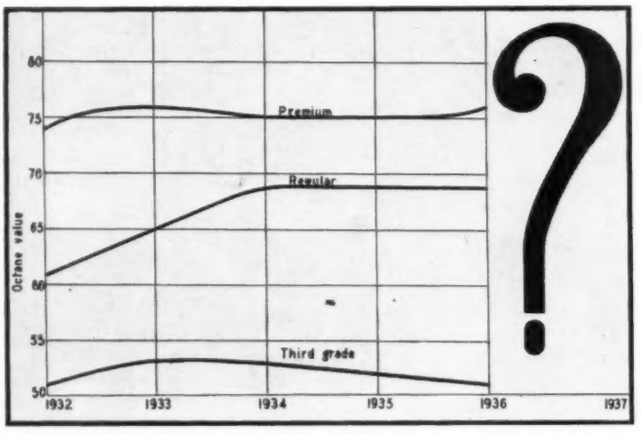
"It is recommended that refiners be offered the option of making lead-treated regular gasoline having an octane number of not more than 70 by the Motor Method or 73 as the mean of the Motor and Low Temperature Method ratings. Corresponding figures for Ethyl Gasoline would be 76 and 79 respectively.

"It is highly desirable that a test method be developed which would give by a single test, ratings which would be substantially equal to the mean of the Motor and Research Method ratings."

Thus, Mr. Webb took the initial step in bringing a most vital question out into the open. Since he indicates the Ethyl Gasoline Corp. will permit its licensees to use this modified method which permits the addition of more lead to the base fuel in the great majority of cases, and since close to 68 per cent of all gasoline made in the United States is directly affected, refiners are trying to visualize what the immediate effect will be with respect to motor fuel quality and manufacturing costs.

### RECOGNIZE DIFFERENCES

It is apparent refiners generally have recognized the lack of agreement between the laboratory tests and road results. They welcome a chance to equalize gasoline quality as determined by actual road tests. They feel the cause which differentiated these gasolines in use on the road will be located and equalized in some equitable manner, now that the subject is brought to their attention in this form.




*Trend of octane values for the three grades of gasoline sold at stations since 1932 as reflected by the annual survey of winter gasolines by The Oil and Gas Journal*

Most refiners who have had time to study the report of the Ethyl Gasoline Corp. appreciate the thoroughness with which the investigation has been carried out and the impartial manner in which the tests have been conducted, but they interpret the conclusions to mean that higher average octane motor fuels will be the immediate result, and these will cost more to produce.

This is based upon the fact that a majority of the gasolines tested and probably the great bulk of the gasoline manufactured in the United States shows a difference of less than 6 points when tested by the Motor Method and the Research Method and close to 3 points when tested by the Motor Method and then by the Low Temperature Method.

### CHECKING GASOLINES

Since Ethyl Gasoline Corp. indicates it will permit refiners to make their regular grade of gasoline 70 octane number by the Motor Method or 73 octane as the mean of the results of the Motor Method and the modified Research Method (Low Temperature Motor Method), competition will force the great majority of them to use the "Low Temperature" procedure. It should be understood three distinct laboratory procedures are involved here, the Motor Method, Research Method and Low Temperature Motor Method, the latter yielding intermediate results.

Each refiner is now busily engaged to see just how his gasolines check but some have indicated their lead requirements would be increased 16 to 25 per cent and not one has indicated he expected other refiners to avoid stepping up the amount of lead used even though the cost would be proportionately higher.

It is also evident they do not expect refiners whose gasolines show a wide difference in octane results under the two methods to take advantage of the option offered by Ethyl Gasoline Corp. to reduce their lead requirements by adopting the Low Temperature Method as the basis.

In conclusion it should be pointed out that insufficient time has elapsed to enable a majority of the refiners to judge accurately their position under the optional Low Temperature Method of test, but the first reaction, almost without exception, after reading the report, was that the ruling of Ethyl Gasoline Corp. could open the way for increasing the octane rating of the regular grade of gasoline from 1 to 1½ points or the equivalent of raising the octane value of the average gasoline by the Motor Method from 70 to 71.5 based upon the actual quantity of lead to be supplied.

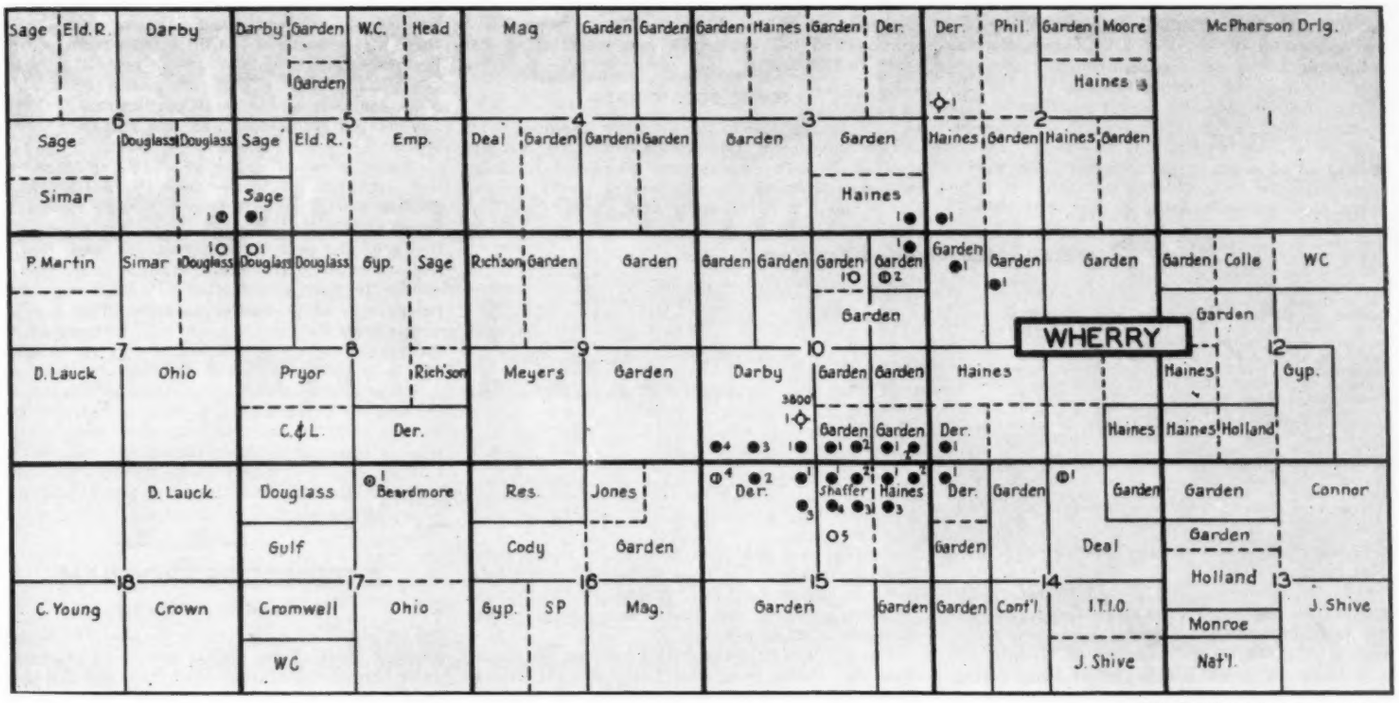
Obviously, even though the cost of the lead is comparatively low at .26 cent per cc., the fact that approximately 68 per cent of all the gasoline sold in the United States leaded means the cost of raising this huge quantity of motor fuel 1 to 1½ points runs into large figures.

On the other hand, if changes in car engine design make it necessary to increase the octane value of the motor fuel, the additional cost could be easily returned to the motorist in the form of higher engine efficiency, and the problem then resolves itself to one of economics.

It will be interesting to follow the discussion of this most important problem as it is brought before the refinery groups of the American Petroleum Institute in Chicago next week.

Recognizing the added work involved in making the "low-temperature" tests and the details involved in making the transition, Mr. Webb concluded his letter of transmittal by saying: "A determination of the mean ratings referred to above involves considerably more work in the laboratory than the determination of the Motor Method octane number and we regret that to date our laboratories have not been able to develop a test method involving a rating under only one set of engine conditions which accomplishes the same result. We believe, however, that our customers who prefer to use the mean octane numbers will consider the additional laboratory work justified by the fact that gasolines so rated may be expected to give road performance more nearly in accordance with their laboratory ratings.

"We have transmitted to the members of the C.F.R. Committee copies of this letter and of the enclosed report and we hope that they may find it possible to develop a simplified procedure which would give equally if not more satisfactory results."




—Mid-Continent Map Co., Wichita.

*Map of north half of Township 21-7w, Rice County, showing locations of the Hauschild, Saxman and Wherry pools*

# Kansans Think One Good Pool Deserves Another

By DAL DALRYMPLE

When L. E. Douglass, independent operator of Hutchinson, Kans., and others uncovered a rich conglomerate pay in a wildcat well east of Sterling, southern Rice County, last April, they opened a field that soon was to become one of the more important oil-producing areas in Kansas. The gushers at Hauschild, as the new pool was named, have featured much of the oil news from the Sunflower State in recent months.

A few weeks ago the Hutchinson operator and associates made another strike about 3 miles northwest of Hauschild, opening what has been called the Saxman pool. A drilling campaign already has started in the new area, which observers believe may be as prolific as the older pool.

In addition to operations in the two pools, a wildcat has been started to the north of Saxman; rig has been built for a wildcat south of Saxman and west of Hauschild; location has been staked for another wildcat northwest of Saxman; other proposed tests are under consideration; acreage has been blocked to the north in Rice County and to the south in Reno County, and the general area surrounding the two producing sectors seem destined for an intensive drilling campaign in 1937.

It was early in April, 1936, that the Douglas Oil & Gas Co. No. 1 Hauschild, NE NE NW section 15-21-7w, discovery well, blew in after pay was topped at 3,369 feet and drilled to 3,372 feet. The well made several head flows, with gas estimated at 4,000,000 to 5,000,000 feet. Fire caused by a spark from a spectator's match destroyed the rig and several persons suffered minor injuries. Testing was delayed until a new rig could be erected. That done, the well made potential of 1,280 bbls. of oil. Later, it was deepened to 3,393 feet, flowed 1,054 bbls. in six hours and made new potential of 3,997 bbls., completed.

Three additional wells were completed in June, and Hauschild took its place as one of the important Kansas fields. They were, in chronological order:

Darby Petroleum Corp. No. 1 Johnson, SE SE SW section 10-21-7w; pay topped at 3,366 feet; total depth, 3,367 feet; flowed 363 bbls. in three hours; potential, 2,160 bbls.

E. J. Shaffer and others No. 1 Hauschild, NW NW NE section 15; pay, 3,370 feet; total depth, 3,379 feet; flowed 2,431 bbls. in five and one-half hours; potential, 10,040 bbls.

Darby Petroleum Corp. No. 3 Johnson, C S half S half SW section 10; pay, 3,361 feet; total depth 3,383 feet; flowed 644 bbls. in six hours; potential, 2,443 bbls.

When that 10,000-bbl. well came in the oil industry generally began to sit up and take notice. Hauschild was recognized as an important pool, and the faith of the independent operators in an area that had been passed over by major oil companies was justified.

One failure on the north edge of the pool failed to dampen the ardor of the oil men, several large producing wells being completed during the succeeding months, one with a potential in excess of 15,000 bbls. The failure was the Darby Petroleum Corp. No. 2 Johnson, C E half E half SW section 10. It topped the Chat at 3,885 feet; Viola lime, 3,709 feet; Siliceous lime, 3,787 feet; cored to 3,800 feet, total depth; plugged back to 3,480 feet, perforated casing but failed to make a producer and was dry and abandoned. Against that failure were the completions in July, August, September and October shown in Table 1.

Thus 19 wells in the Hauschild pool had a total potential of 103,336 bbls. daily. That total was increased during the past week when

*Discoverers of the Saxman pool, left to right: R. W. Sage, Augusta, Kans.; L. E. Douglass, Hutchinson, and Charles Yankey, Wichita*

Shaffer No. 2 Hauschild was deepened to 3,398 feet and made new potential of 5,098 bbls. Allowable production in October was held to 2.03 per cent.

Only Silica and Burrton fields in Kansas have a greater total potential than Hauschild.

Identity of the pay formation has been somewhat of a moot question. It has been variously designated as Chat or Conglomerate, but now is more generally designated as the latter. It is believed to be a conglomerate on top of the Mississippi lime, with some of the production perhaps from the lime itself.

**TABLE 1—COMPLETIONS JULY-OCTOBER**

| Well and location— | Pay (feet) | Total depth (feet) | Potential (bbls.) |
|---|---|---|---|
| Garden No. 1 Hauschild, SW SW SE section 10-21-7w | 3,368 | 3,385 | 6,912 |
| McPherson Drilling Co. No. 1 Yaple, SW SE SE section 10-21-7w | 3,364 | 3,380 | 6,186 |
| Shaffer and others No. 2 Hauschild, NE NW NE section 15-21-7w | 3,374 | 3,384 | 2,363 |
| Derby Oil Co. No. 1 Hauschild, SW cor. section 11-21-7w | 3,361 | 3,380 | 5,848 |
| Douglass No. 2 Hauschild, C N half N half NW section 15-21-7w | 3,363 | 3,366 | 15,149 |
| Douglass No. 3 Hauschild, SE NE NW section 15-21-7w | 3,375 | 3,389 | 8,750 |
| Garden No. 2 Hauschild, SE SW SE section 10-21-7w | 3,368 | 3,380 | 10,362 |
| Garden No. 1 Hauschild, NW NE NE section 15-21-7w | 3,368 | 3,381 | 6,443 |
| McPherson No. 2 Yaple, SE cor. section 10-21-7w | 3,364 | 3,384 | 6,377 |
| Garden No. 2 Hauschild, NE cor. section 15-21-7w | 3,371 | 3,385 | 5,925 |
| Shaffer No. 3 Hauschild, SE NW NE section 15-21-7w | 3,375 | 3,396 | 2,706 |
| Derby Oil Co. No. 1 Theede, NW cor. section 14-21-7w | 3,360 | 3,385 | 1,154 |
| Darby No. 4 Johnson, SW cor. section 10-21-7w | 3,353 | 3,386 | 265 |
| Garden No. 3 Hauschild, SW NE NE section 15-21-7w | 3,379 | 3,383 | 4,793 |
| Shaffer No. 4 Hauschild, SW NW NE section 15-21-7w | 3,382 | 3,396 | 1,463 |

The importance of the general Hauschild district, as included in Township 21, Range 7w, was greatly enhanced several weeks ago when R. W. Sage of Augusta, Charles Yankey of Wichita and L. E. Douglass opened a new pool at No. 1 Patton, SW cor. section 5-21-7w, about 2½ miles northwest of Hauschild and south of the town of Saxman. Because of proximity to the village, the new area was named the Saxman pool. No. 1 Patton has Conglomerate pay at 3,329-37 feet, and made potential of 1,137 bbls., based on a six-hour flow test and with cavings in the hole. Although it found the pay late in September it had not been finally completed at time of writing. There was 150 feet of open hole below where 8-inch casing was set, so liner was run, tanks erected, connections made and the hole deepened a few feet into the rich pay before it could be completed. On final completion, another potential test was to be taken —and the enthusiastic operators were predicting a new potential of around 5,000 to 7,000 bbls. It flowed as high as 300 bbls. an hour on short tests.

### *FORMATIONS IDENTICAL*

This was considered one of the most significant strikes to be made in Kansas in the past year because of the possibilities it opens up. The Conglomerate pay in the Patton well is the same as that in the Hauschild wells. No tests have been drilled between the Hauschild and Saxman pools and, although some of the wells on the west side of Hauschild have had comparatively small production, the pool has not been defined in the direction of Saxman.

Some observers believe the two pools may be connected, forming one large field producing from Conglomerate. That is a matter for future determination, but the possibilities are there and several tests may be drilled in the intervening area before the matter finally is settled one way or the other. Already, one test well has been started to the southeast of the Saxman pool and west of Hauschild. It is the Beardmore and others No. 1 Johnson, NW NW NE section 17-21-7w. If it finds production in the Conglomerate, a considerable drilling campaign between the two pools undoubtedly will follow. The Hauschild and Saxman pools, incidentally, are the only important areas in Kansas finding commercial pay in the Conglomerate.

There is other production in Township 21-7w. First oil in the district was found in the Wherry pool, less than a mile north of Hauschild. The Wherry discovery well was completed in October, 1933, producing 250 bbls. of oil in 24 hours from Chat. Five wells have been completed in the pool, all on acreage held by Garden Brothers. The five wells had a total potential of 923 bbls., with an allowable production of 19.32 per cent in October.

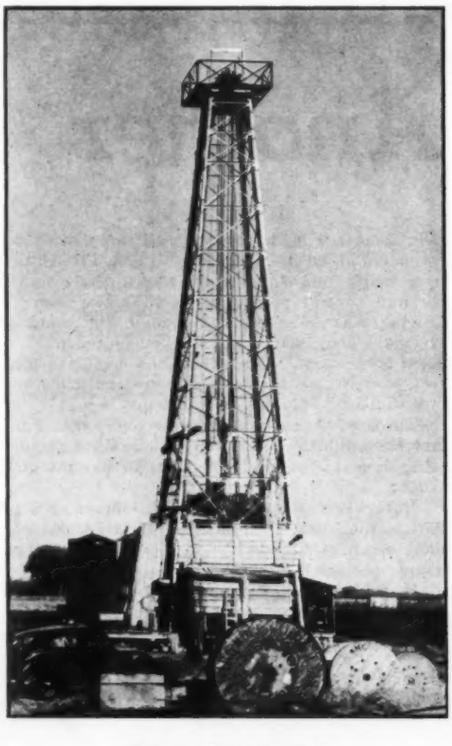
Garden and others No. 1 Roberts, SW NE NW section 11-21-7w, on the east side of the pool, is the newest producer at Wherry, being completed last April. It had Chat at 3,384 feet; Wilcox sand, 3,740-80 feet; Siliceous lime, 3,804 feet; hole full of water at 3,875 feet, total depth; plugged back to 3,400 feet, shot and acidized and pumped 15 bbls. of oil and 8 bbls. of water in 24 hours. The largest well at Wherry is the No. 1 Leonard, SW cor. section 2-21-7w, which had potential of 420 bbls. in October.

### *PONCE POOL OPENED*

The fourth pool in the township was opened by Ralph Day at No. 1 Ponce (Mason), NW NE NE section 28-21-7w, which was completed in July, although it found the pay several weeks earlier. It is about 2 miles south and slightly west of Hauschild, and has been named the Ponce pool. The discovery well had Chat at 3,388-3,400 feet and was bottomed at 3,431 feet. It pumped 135 bbls. of oil after acidizing, and in October was given an allowable of 23.80 per cent.

One dry hole has been drilled between the Hauschild and Ponce pools, the Derby Oil Co. No. 1 Brown, NW cor. SW section 22-21-7w. It was dry and abandoned at 3,397 feet. Dry holes also have been drilled in sections 27 and 34, southeast of Ponce.

Two other dry holes have been drilled in the township. One was north of the Wherry pool, in SW NW section 2, dry and abandoned at 3,774 feet. The other was in NE cor. section 36.



*Saxman discovery well*

The township is expected to be one of the most active areas in Kansas during 1937, with the activity due to extend into neighboring townships and across the county line to the south in Reno County.

### *ACTIVITY AT SAXMAN*

Already, three new tests are getting under way in the Saxman pool, all offsetting the discovery well. They are being drilled by Douglass and associates, who own most of the close-in acreage. If they prove to be producers of any consequence, numerous other tests will be drilled thereabouts.

In addition to the one wildcat already started between the Hauschild and Saxman pools, two or three other tests for the intervening area are being projected. Certainly, operators will give the intervening sector a thorough going-over in their quest for more of the rich Conglomerate pay that has brought Hauschild to the front among Kansas pools.

There is no telling, as yet, how far Hauschild will extend to the east. Deal Oil & Gas Co. is drilling a well one-half mile east of production at Derby Oil Co. No. 1 Theede. Neither has the south limits of the pool been ascertained, and Shaffer and others No. 5 Hauschild, south of production in section 15, may give further information pending possibilities of production in that direction. The west end of the pool has not been determined, although the most westerly well, Darby No. 4 Johnson, is one of the smallest producers in the field.

Other active operations in the township include the Garden & Haines No. 1 Whinery, SE NW NE section 10-21-7w, on the southwest side of the Wherry pool and north of Hauschild; and the No. 1 Mansz that Ralph Day and associates are drilling in section 21, offsetting the Ponce pool discovery on the north.

## AUTOMOTIVE PROGRAM

*(Continued from Page 21)*

tion of inhibitory properties in the oils. The higher viscosity index of the lighter grades and the generally improved performance of these oils are commended by the engine designers as aiding them in solving one of their most important problems.

The use of hypoid gears will be greatly expanded in the 1937 models. Their sponsors feel their application has been perfected to the point where they are an important contribution in making possible the greater power and noiseless speed required in the smaller cars.

The most important problem in the use of these gears is their lubrication. The position of the car manufacturers is that a straight mineral oil is not a satisfactory lubricant and they are attempting to protect their customers by making definite recommendations as to the specifications of the compounded oils to be used.

One of the largest manufacturers, whose 1937 cars will have the hypoid gears, is supplying its 10,000 dealers with more than 100,000 pounds of the oil which meets the specifications as determined by its development department. Its instruction book to new buyers will call attention to the necessity of using the right lubricant for these gears, suggesting that only oils recommended by the dealers be used. The company has discussed its requirements with oil companies and when its new models are introduced next week it will be in a position to recommend the oils of at least 10 companies. It is expected this list will increase to the point where car owners can get the needed lubricants throughout the entire country. The company explains it has no desire to enter the lubricating oil business through its dealers, but does insist on protecting its customers in this one important lubricating problem.

## Technologists to Meet

Three petroleum technologists of international recognition will deliver short talks before a dinner-meeting of the Institute of Petroleum Technologists to be held in Chicago at 7 p.m., November 10, at the Stevens Hotel. Dr. R. E. Wilson, vice chairman of the Pan American Petroleum & Transport Co., will be toastmaster, the speakers to be G. H. Coxon, manager of refining and research for the Anglo-Iranian Oil Co. and member of the I.P.T. council, who will discuss "Oil Problems Overseas"; Prof. V. N. Ipatieff, of the research division of the Universal Oil Products Co., who will enumerate some of his "Recollections of the Russian Oil Industry," and Dr. T. A. Boyd, Jr., director of research for the General Motors Corp., who will briefly discuss "The Oil and Motor Industries."

The meeting will be the second to be held in the United States, the first having been in Tulsa in 1936. Dr. Gustav Egloff is chairman of this committee and assisting him are Dr. T. G. Delbridge, B. C. Frichot, Dr. C. K. Francis, Walter Miller and Cary Wagner.

# Two New Oil Pools Are Discovered in Central Michigan

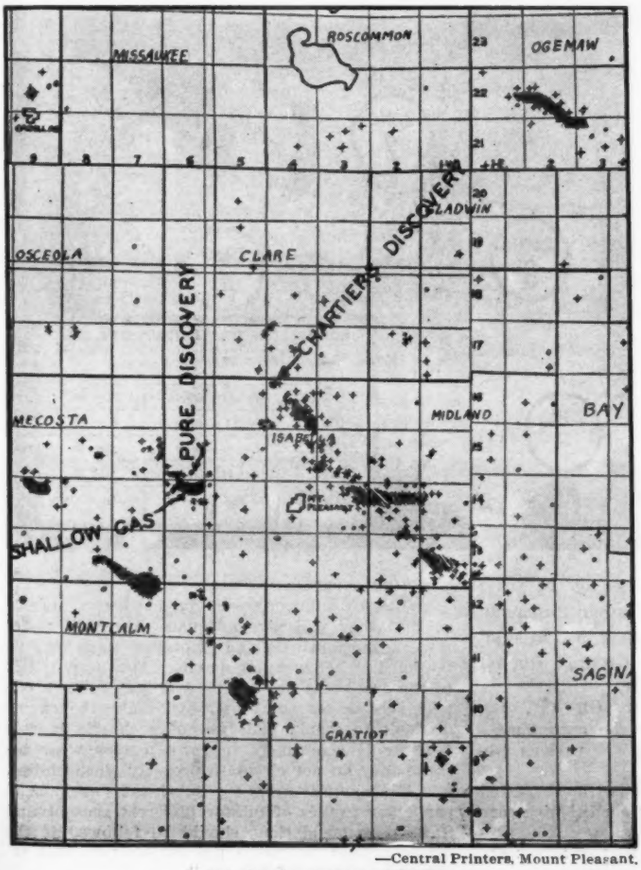
By T. P. SANDERS

*No. 1 Embrey completed for about 500 bbls. daily, opens Michigan pool*

MOUNT PLEASANT, Mich., Nov. 2.—The enterprising search for additional production being carried on throughout Central Michigan has resulted in the discovery of what are apparently two new oil pools entirely isolated from any known pools. Coming after many months of almost fruitless wildcatting these discoveries are of great concern to Michigan refiners, and others interested in the state's oil supply.

Probably the more recent discovery is the most important. This occurred when Pure Oil Co. brought in No. 1 Embrey in the NW NW SW of section 34, Sherman Township (15n-6w), of Isabella County. This well flowed almost 500 bbls. of 47-degree gravity oil per day from a total depth of 3,611 feet. It is the highest gravity oil yet found in Michigan except for that produced from a well 1 mile south, which was evidently from the same reservoir, but the production was so small that this well was later plugged. The Embrey well was deepened on October 29 and flowed 30 to 40 bbls. per hour immediately after deepening.

This discovery well was drilled by Lupher Drilling Co. The tops of the more important formations were logged as follows: Marshall, 1,322 feet; Red Rock, 1,525 feet; Berea, 2,485 feet; Traverse, 3,052 feet; Dundee, 3,602 feet. The first pay was found at 3,606 feet. After testing, the well was deepened to 3,611 feet, and later deepened again. While the pay is generally considered to be the Dundee formation there is some difference of opinion. There is an erosional unconformity between the Dundee and the Bell shale above, so that while the Dundee is 200 feet thick in places, it is entirely missing in other districts, due probably to erosion, or perhaps to nondeposition. Where it is absent it is believed the bit goes out of the Bell shale into the Monroe formation, which is usually only distinguished from the Dundee by the fact it is dolomite while the Dundee is considered a true limestone. However, the composition of either could vary from place to place, and some oil reservoirs are believed to have been formed by the dolomitization of limestone (replacement of calcium by magnesium), which could cause a loss of volume of 12 per cent, creating the porosity necessary for the accumulation of oil. There is always some question as to whether production is obtained from the Dundee or the Monroe in a new area, and often the question remains unsettled in older fields, such as the Crystal field. This makes little difference in mapping since the erosional surface below the Bell shale is contoured.




—Central Printers, Mount Pleasant.

*Latest developments in Michigan*

Some years ago Pure Oil Co. assembled a block of 80,000 acres several miles west of Mount Pleasant. The Embrey well is situated on this block, and is the fifth well which it drilled in searching for production on this acreage. Much of the acreage is still retained, and it is estimated 3,000 acres have production possibilities. The Broomfield gas area occupies a portion of the block. The first Dundee test made by Pure Oil Co. in this area was No. 2 Willie, in SW NE of section 4, of Broomfield Township. This was deepened from a Stray sand depleted gas well to the Dundee where natural production of 5 bbls. per day was obtained which increased to about 25 bbls. after acid treatment. The oil was the same high gravity crude found in the new Embrey well. After several years the production had declined to 3 bbls. per day, and the well was plugged. Water was found about 30 feet below the oil show in completing the well. Later a test was drilled to the south in section 15 of Broomfield Township which was a dry hole in the Dundee. The next two Pure tests were drilled in section 15 of Rolland Township and section 15 of Fremont Township. Both were dry. Then, since most of the leases in the block were for a duration of 10 years, and were due to run out in 1937 and 1938, it was decided to make a fifth test a mile north of the abandoned No. 2 Willie. This resulted last week in the discovery of the new pool. In the meanwhile, the Dundee was tested by the Michigan City Natural Gas Co., which deepened a shallow gas well in section 3 of Broomfield Township and found the Dundee about 5 feet lower than in No. 2 Willie to the west, and it was dry. Dry Dundee tests were also drilled in this vicinity by Deerfield Oil & Gas Co. in section 7 of Deerfield Township in 1930, and by Lupher Drilling Co. in section 36 of Broomfield Township in 1933.

### LIMITS ESTABLISHED

The foregoing reveals that the limits of the new Sherman and Broomfield townships pool have been established roughly to the south and not at all to the north. With very few structural control points known, the size of the pool cannot be estimated, but, large or small, it is definitely a new pool. No offsets or other tests had been started on October 30, but interest is high, and activity will soon commence, though it is expected development of the pool will be orderly because of the considerable acreage under lease by Pure Oil Co.

The other discovery of importance took place on October 9 when Chartiers Oil Co. found oil in the SW quarter of section 5 of Vernon Township (16n-4w), which is likewise in Isabella County, Central Michigan. This well was good for 50 to 100 bbls. per day of natural production, but after a 1,000-gallon acid shot it increased to an estimated potential of 100 bbls. per hour. Since that time it has been producing about 900 bbls. per day against a back pressure of over 400 pounds. It is on the Vernon-Mount Pleasant-Leaton trend, and shows the existence of a new pool northwest of the Vernon pool. The Stray sand was logged from 1,480 to 1,514 feet and contained a show of black oil, gas and water. Berea was found from 2,710 to 2,726 feet, Traverse lime at 3,245 feet, Monroe (or Dundee) at 3,908 feet, and the pay

*(Continued on Page 35)*

# JOBBING GROUP OPPOSES COMPACT, MARKETING CODE, CONNALLY ACT

CHICAGO, Oct. 29.—Members of the National Oil Marketers Association in the closing session of their three-day annual meeting here indicated they will oppose the final approval of the code of marketing practices now before the Federal Trade Commission unless certain provisions are added which they consider necessary to the protection of independent jobber operations.

At the meeting, which was attended by less than 100 jobbers, two resolutions having bearing on the code were approved. The first resolution approves the holding of a trade practice conference by the Federal Trade Commission for the purpose of approving a code with the qualifying proviso that "suitable safeguards are inserted to insure enforcement of the Robinson-Patman law and all other antitrust acts."

The second resolution explains "there is a definite demarcation between N.O.M.A. interests and those interests represented by C. E. Arnott and his associates and further that we request sufficient written notice from the commission relative to any and every conference that deals with the marketing branches of the oil industry."

Mr. Arnott has been active in bringing about the formation of a new code over the past year and half following the demise of the N.R.A. The position taken by some of the jobbers in the discussion was that he represented the large integrated companies in the formation of the code. Paul Hadlick, secretary of the association, announced that he had resigned as a member of the national committee of three which has had charge of the formation of the code due to his dissatisfaction with the manner in which the code work has been handled in its presentation to the Federal Trade Commission. The other members of the committee are Mr. Arnott and W. R. Schuh, the latter representing retailers.

Mr. Hadlick announced that as part of its program the association would oppose the extension of the Connally Act which prohibits the interstate shipment of crude and refined products produced in excess of state allowables. It will also oppose at the coming session of congress the extension of the Interstate Oil Compact. Mr. Hadlick criticized the present arrangement in which the Bureau of Mines estimates monthly crude oil requirements for the industry.

At the three-day meeting the Iowa plan under which the major oil-distributing companies have given up station operations to dealers was both condemned and approved. Henry E. Wormhoudt, jobber of Des Moines, Iowa, said the plan has not been beneficial to jobbers. The expansion of co-operative oil-marketing organizations, which now have a large distribution in the middle western states, was condemned at the meeting as representing unfair competition to jobber interests.

## NO SUBSIDY IS NEEDED BY ALCOHOL, SPEAKER SAYS

Alcohol suitable for blending with gasoline to be used as motor fuel may be made from agricultural products at an overall cost of 25 cents per gallon, according to W. L. Owen, consulting bacteriologist, who spoke before the southern chemurgic conference in Lafayette, La., last week. He said this could be done and the product sold successfully without granting the new industry a subsidy.

"In the light of our present knowledge of the scientific principles involved in the zymogenic processes of alcohol fermentation," said Mr. Owen, "we are convinced we can produce alcohol from molasses, corn, Irish and sweet potatoes or from artichokes, at those costs."

The speaker admitted, however, that present cost figures on producing alcohol are inadequate and inconclusive and that "after three decades of industrial alcohol production in this country we still don't know the cost balance of the process."

## SHIFT FROM GASOLINE TO DIESELS IS PREDICTED

Within four years, C. L. Cummins, president of the Cummins Engine Co., writes in the Rotarian Magazine, diesel engines will replace gasoline engines in many automotive lines, although, he explains, gasoline power will never be eliminated.

"We prophesy a major trend away from gasoline engines and into diesel engines for a large number of automotive tasks, but by no means all," Mr. Cummins writes. "We believe that the gasoline engine has a definite place in the field of transportation. We have not found how to make diesels as inexpensively as gasoline engines can be made. We are contenting ourselves with predicting that in the field of passenger cars they will take over only those cars where the per-mile cost is of major importance."

## PIPE LINE COMPANIES ALLOWED SIX MONTHS TO FILE RATE DATA

WASHINGTON, D. C., Nov. 2.—Following the hearing of representatives of pipe line companies before the Interstate Commerce Commission on the report of Examiner J. Paul Kelly recommending reduction of about 35 per cent in tariffs on transportation of crude oil by pipe line below those prior to 1935, at least six months will elapse before a final ruling. It was agreed that the present record, including only those years up to the close of 1933, should also take in 1934 and 1935. It will require at least six months to gather the data for the two years.

The data filed by the pipe line companies shows that during the depression, there has been an increase in the cost of maintenance and per-mile transport for the lines. Approximating from 15 per cent to 40 per cent in many cases, indicating the companies will show larger operating expenses for 1934 and 1935.

## TANKER TRAFFIC INTERRUPTED ON ATLANTIC COAST BY STRIKE

NEW YORK, Nov. 3.—Serious interruption in normal movement of petroleum and products from Gulf Coast ports to northern Atlantic terminals was threatened early this week by the seamen's strike in sympathy with the West Coast situation. Several oil company tankers were at least temporarily tied up at Baltimore, Philadelphia, New York and other ports in northern Atlantic territory. Others en route from the Gulf Coast with cargoes were being directed to points of least resistance, but owners were disturbed about their ability to avoid a strike among their crews.

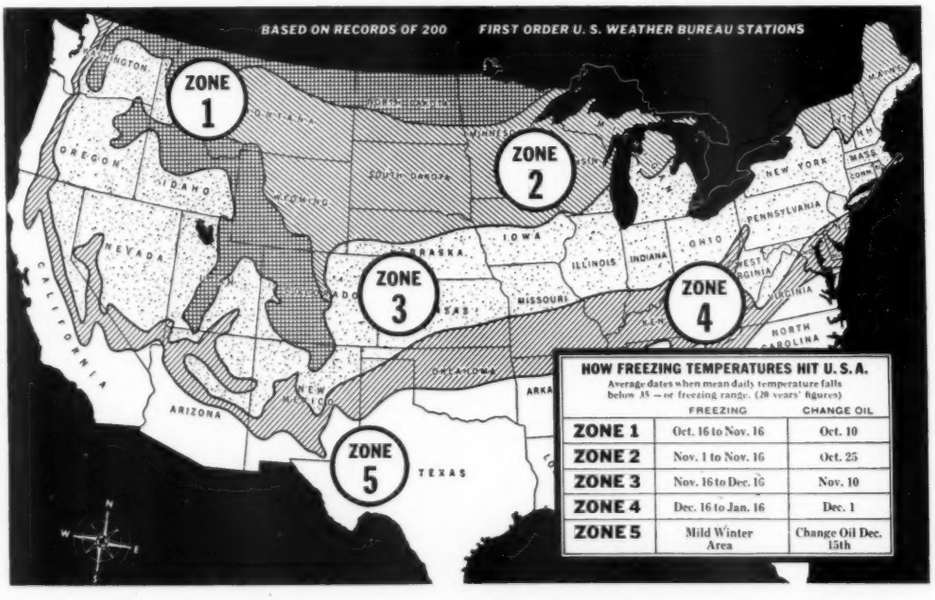
Several companies said they depend on the day-to-day tanker deliveries to supply their working stocks and that sailing delays of only a few days would seriously hamper their normal distribution machinery.

No scarcity of material has developed so far, but projection of the strike conditions for a week or more will affect concerns wholly dependent on deliveries by water from Gulf Coast points.

## TEXAS OIL AND GAS TAX

AUSTIN, Tex., Nov. 2.—The Texas legislature passed the Frazer-James omnibus tax bill, which increases utility, oil and gas taxes approximately 35 per cent. The bill will raise approximately $8,000,000 new revenues per year. Rates on oil were increased from 2 per cent to 2¾ per cent and on natural gas from 2 to 3 per cent.

## NOVEL WEATHER MAP TELLS MOTORIST WHEN TO CHANGE OIL




A scientific weather map, based on 20 years of records kept by the U. S. Weather Bureau in all parts of the country, is the latest idea to stimulate motorists to change to winter grades of oil with the coming of cold weather.

Published by Socony-Vacuum Oil Co., the unique map indicates by zones the approximate dates on which freezing weather hits various sections of America.

The freezing dates, together with suggested dates for oil change and winter conditioning, are indicated on a chart.

Giving practical application to the new map, a release from the Socony-Vacuum automotive engineering department states:

"Oils for summer use are made heavy in body so that they will give adequate protection under extreme temperatures and afford good economy in the hardest hot weather driving. However, if left in the crankcase during the cold season, such oils may become too thick and will make the engine difficult to crank. The use of such oils in cold weather is also likely to cause excess wear because they do not circulate properly when chilled.

"All manufacturers of lubricants recommend particular grades of oil for different seasons and these recommendations should be followed if the driver wishes to insure the satisfactory and efficient operation of his car."

# Prove Oklahoma Capitol Sitting Atop Rich Oil Store

When excitement was highest during the boom at Oklahoma City a few months ago, some wag opined the state house was sitting over an oil pool and suggested that a derrick be erected on top of the capitol where the dome should be, pipe be set through the building and a hole drilled to the pay sand below.

His plan found no favor in the eyes of oil men, but today it is being proven he was right—There is an oil pool beneath the capitol!

Sunray Oil Co. and Phillips Petroleum Co. No. 11 State flowed at the rate of 190 bbls. of oil an hour with tools still in the hole, production coming from that part of the Oklahoma City pool that is under the capitol. And yet, paradoxical as it may seem to the uninformed, location of No. 11 State is across the street and about 220 feet west of the building.

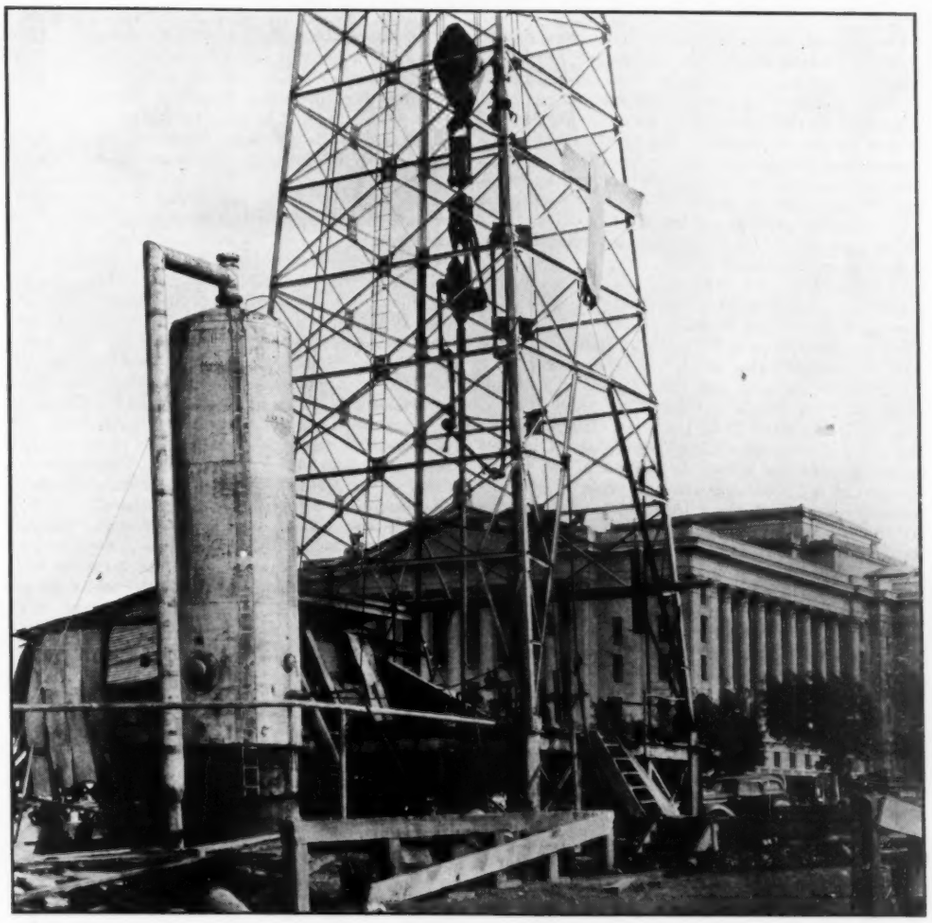
The explanation is found in directional drilling. The operators believed they could get better drainage if they could tap the Wilcox sand under the capitol rather than by drilling straight down from the location. Accordingly, whipstock was set and other equipment necessary to the drilling of a slanting hole was used. It found the sand and was bottomed in it at 6,465 feet, beneath the southwest corner of the state building. In addition to the oil that is coming from beneath the capitol, the well produced about 3,000,000 feet of gas. Tubing was being run, preparatory to taking potential test.

Although location was tentatively made for No. 12 State, completion of No. 11 State probably will conclude present operations of the Sunray and Phillips companies on the state-owned tract surrounding the capitol.

The first of the 11 wells, the No. 1 State, was completed June 12, 1936, for a potential production of 11,289 bbls. Production increased, and present potential is 11,850 bbls. The second well to be completed was No. 3 State, also in June. Its original potential was 13,411 bbls., and present potential is 11,960 bbls.

The other eight state wells to be completed and their present potentials are: No. 2 State, 11,960 bbls.; No. 4 State, 11,305 bbls.; No. 5 State, 6,000 bbls.; No. 6 State, 12,035 bbls.; No. 7 State, 12,553 bbls.; No. 8 State, 15,294 bbls.; No. 9 State, 12,543 bbls., and No. 10 State, 9,335 bbls. This gives a total current potential of 115,002 bbls. for the 10 completed wells on the state tract.

Nos. 9 and 10 wells are directly opposite the capitol on the east side, and Nos. 5 and 11 wells are immediately west of the capitol.



*Sunray Oil Co. and others No. 11 State, by directional drilling, has tapped oil sands beneath the Oklahoma Capitol*

## Oklahoma-Kansas Allowable Follows Bureau Estimate

Oklahoma and Kansas allowable production in the month of November will follow the recommendation of the Bureau of Mines, the estimates of demand of which were 558,400 bbls. per day in Oklahoma and 154,500 bbls. per day in Kansas. No formal order had been issued up to this writing but it was generally understood that the corporation commissions of both states would act in accord with the bureau's estimates. At a meeting of operators and oil purchasers with the Chief Conservation Officer William J. Armstrong at Oklahoma City, October 29, allowables were recommended for the pools of Oklahoma.

As the allowable for Oklahoma is only 1,500 bbls. below that of October it made little difference in most of the pools. No change was made in the allowable in the Oklahoma City Wilcox sand zone which was 117,084 bbls. per day from 657 wells which have a rated potential of 1,392,374 bbls. per day. Class B pools, with 2,831 wells, were allowed 114,889 bbls. per day and Class C pools with 728 wells were given an allowable of 106,878 bbls. The Fitts pool, Simpson sand zone, in Class C, with 363 wells with a rated potential of 885,745 bbls. per day was given an allowable of 52,512 bbls., while the Fitts Wilcox sand zone with a potential rated at 100,662 bbls. was allowed to produce 3,378 bbls. per day from 24 wells.

The Louisiana Conservation Department's November proration order provided for a daily increase of 2,150 bbls. of crude oil in the state as compared with the October allocation.

Production for the state was set at 238,350 bbls. per day compared with 236,200 bbls. in October, which is about 40,000 bbls. more than the Bureau of Mines recommendation.

South Louisiana fields are allocated 155,850 bbls. daily, and North Louisiana 82,500 bbls. The greatest increase in any one field was that for Rodessa, with a 2,500-bbl. increase, raising the total allowable for Louisiana wells to 62,500 bbls. At no time during October did the Rodessa wells average their per well allowable, however.

California's November crude quota remains unchanged at 544,000 bbls. daily notwithstanding the suggested increase to 549,500 bbls. by the U. S. Bureau of Mines. The bureau's 5,500-bbl. increase was based on the recommendation of no withdrawal of crude oil from storage during November. Although withdrawals from storage in California in the past few months have been heavy, stocks are practically at the same level as at the close of January this year. Steady additions to storage are anticipated for the next few months.

## Crude Oil Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ending October 24 totaled 291,846,000 bbls., according to the Bureau of Mines, a decrease of 692,000 bbls., comprising decreases of 576,000 and 116,000 bbls. in stocks of domestic and foreign crude, respectively. Although imports of crude declined materially from the previous week, daily receipts of 112,000 bbls. was above the average of recent weeks. Daily average runs to stills was about 3,015,000 bbls., or about 70,000 bbls. below that of the week ending October 17.

**STOCKS OF CRUDE PETROLEUM**

| Grade of crude oil— | Oct. 17 | Oct. 24 |
|---|---|---|
| Pennsylvania Grade | 4,105,000 | 4,123,000 |
| Other Appalachian | 668,000 | 637,000 |
| Lima-N. E. Indiana-Michigan | 1,016,000 | 1,025,000 |
| Illinois-S. W. Indiana | 9,892,000 | 9,961,000 |
| N. Louisiana and Arkansas | 10,578,000 | 10,608,000 |
| W. Texas and S. E. New Mexico | 28,645,000 | 28,528,000 |
| East Texas | 18,783,000 | 19,063,000 |
| Other Mid-Continent | 117,569,000 | 116,963,000 |
| Gulf Coast | 26,895,000 | 27,208,000 |
| Rocky Mountain | 25,668,000 | 25,690,000 |
| California | 30,351,000 | 29,788,000 |
| Foreign | 2,068,000 | 1,952,000 |
| Total reported weekly | 276,238,000 | 275,546,000 |
| Estimate of unreported stocks | 16,300,000 | 16,300,000 |
| Total stocks | 292,538,000 | 291,846,000 |

# W. S. FARISH CITES THE YATES FIELD ILLUSTRATING PRORATION BENEFITS

W. S. Farish, chairman of the board, Standard Oil Co. (New Jersey), replying to a request from Houston Harte, publisher of the San Angelo, Tex., Standard-Times, in connection with the ninth anniversary of the Yates field, wrote in part:

"The general perfection and advantage to all concerned in the Yates program has been generally overlooked or ignored. The burden which proration imposes upon producers today arises very largely from the necessity of drilling an excessive number of wells in order to secure an adequate and equitable division of the market outlet. The Yates plan at the very inception of proration practice eliminated this difficulty.

"When the Yates field went on voluntary proration the price for Winkler County crude was 60 cents, posted by the Southern Crude Oil Purchasing Co. Humble paid 60 cents for the first oil it took from the Yates field. By December, 1927, the Winkler County and the Church and Fields areas in West Texas had increased their production to over 150,000 bbls. per day. There was no demand for so much oil, and thousands of barrels moved at distress prices by tankcars. It is impossible to say what the average price of this distress oil was, but I know that much of it sold as low as 30 cents per barrel on board tankcar. Through all this flurry, the Yates field continued steadily at a production rate of 47,000 bbls. daily with its price basis unchanged.

"I sincerely believe that proration of the Yates pool proved most satisfactory up to quite recently. Complaints now are being made because final adjudication of titles through the courts has set up a few small tracts on which good wells have been drilled. It is now contended that the allocation of production to these small holdings is out of all balance or equitable relation to the other producing units.

"Great benefits have come from proration orders such as the one described in the Yates pool. Drilling unnecessary wells and building unnecessary, wasteful storage have been eliminated; there has been a general lessening of expense in all directions for all concerned, which enables such pools as have real proration to attain low-cost production. Of course, it is well known in the industry that the most efficient, least wasteful, lowest cost, most scientific production can be attained under unit operation. This is almost impossible in the United States, except where one company or one management is fortunate enough to own an entire field.

"Effective proration in the largest possible units of development is the next approach to the efficiency standard of unit operation. The general benefits to all concerned: to the public, producer, transporter, and refiner, are so well recognized today and proration practices have become so definite a policy under the conservation laws of the oil-producing states that there is no longer any argument on the general principles. The difficulties and the lack of perfection come through the subdivision of surface tracts, which makes difficult equitable division of markets balanced against actual ownership of oil in place.

"For proration to be most effective, whether the unit to be drilled is 10 acres, 20 acres, 50 acres or 100 acres, there should be no exceptions to the unit, but in some way smaller units should be made to consolidate. I realize fully the difficulties, but they must be solved if excess drilling and unfair and unreasonable advantages are to be eliminated.

"The only real advantage that foreign operators have over domestic producers today is the advantage of unit operation abroad vs. competitive drilling, small acreage divisions, and the failure to attain more widespread application of sound proration policies in the United States."

## SHELL WINS TROPHY

Honored by the National Safety Council, Los Angeles, offices of Shell Oil Co. received the semi-annual trophy for safety in gasoline plants.

"Competing with over 800 gasoline plants in the entire United States, Los Angeles Shell men have captured this coveted prize for absolute safety in operation and 'no man hours lost.' While the award was for the first six months of 1936, the Shell record dates back to April, 1932, and to date the tremendous total of 1,196,000 man hours without any kind of a lost-time accident has been piled up," said R. S. Tulin, Shell official in charge of gasoline plants.

Plants of the oil company, entered as a group under one name in competition with other United States gasoline plants, are situated in Los Angeles, Long Beach, Ten Section, Bakersfield, Santa Maria, Ventura, Dominguez and Capitan.

R. S. Tulin is shown with the National Safety award.

## THE MARKETS*

**CRUDE OIL:** ***Heavy crudes in Saxet, Refugio, Greta, O'Connor, McFaddin, and Tait advanced 5 cents to 95 cents; heavy crude of Mirando type in Duval, Jim Hogg, Nueces, Webb and Zapata counties and Heyser in Calhoun County and Placedo in Victoria County advanced 5 cents to 90 cents; Talco crude advanced 5 cents to 65 cents. Advances which apply to approximately 100,000 bbls. of crude daily reflect stronger market for fuel oils. Rock Springs, Wyo., crude reduced 3½ cents to $1.08½. All changes effective November 1.***

**REFINERY:** ***Gasoline price situation not uniform with conditions in some refining areas indicating weakness with improvement noted in others. Demand for all grades of fuels continues to expand and prices higher when any changes are made. Seasonal shift to the lower viscosity lubricants with price weakness apparent in summer grades.***

**TANK-WAGON AND SERVICE STATION:** ***Gasoline and kerosene prices lowered at few points in Standard of Kentucky territory.***

**FINANCIAL:** ***Pre-election dullness in trading with minor changes in prices. Average of 30 representative stocks for week ending October 31: High, 37.78; low, 36.08 close, 37.34. Week ending, October 24: High, 37.89; low, 36.15; close, 27.23.***

*Detailed information in Market Section.

## COLLETT TO ADDRESS I.P.A.A

Charles F. Roeser, president of the Independent Petroleum Association of America, announces that J. D. Collett of Fort Worth, Tex., president of the General Mid-Continent Oil and Gas Association, will be the speaker at the general luncheon in the Chamber of Commerce dining rooms at Oklahoma City Monday noon, November 30, during the seventh annual meeting of the Independent Petroleum Association. He will speak on "The Benefits that Will Accrue to the Petroleum Industry from the Accomplishments of the Five-Point Program of the Independent Petroleum Association of America."

Wirt Franklin, first president of the Independent Petroleum Association, will preside.

## TRACEY HEARING POSTPONED

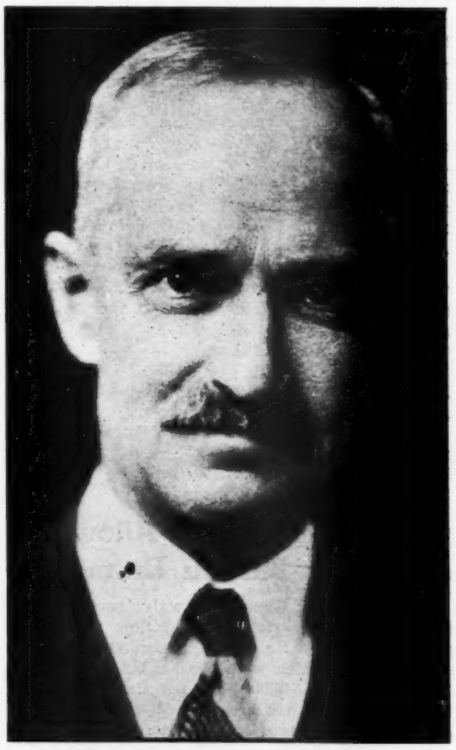
FORT WORTH, Tex., Nov. 2.—By mutual consent of attorneys for the defendant and the government the removal hearing of W. A. Tracey today was postponed until November 30. Tracey, who is in charge of wholesale tankcar sales for the southwestern division of the Sinclair Refining Co., was recently reindicted by the federal grand jury at Madison, Wis., on perjury charges in connection with his testimony presented in the investigation of alleged violations of antitrust acts by refining and marketing organizations. Tracey was indicted a second time by the grand jury after a federal court at Amarillo, Tex., had refused to permit his removal to Madison on the first indictment returned last summer.

## STATE COMPLETES WELL

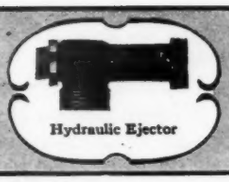
JACKSON, Miss., Nov. 2.—The state of Mississippi completed its second gas producer on state insane hospital property in the northern Jackson gas field, estimated good for 40,000,000 feet daily.

The State is preparing for the immediate drilling of a test to 5,500 feet for oil on this structure, according to Henry N. Toler, Mississippi oil and gas supervisor. Equipment is being moved from the gas well.

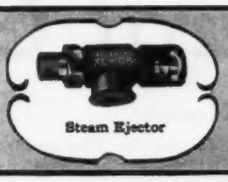
The city of Vicksburg, Miss., has recently entered into contract with the Mississippi Minerals Commission to purchase the output of new wells recently completed by the state in Jackson gas field. Pipe line is expected to be laid to provide domestic needs there.



***HERMAN RUSSELL***
***Elected President American Gas Association***


Hydraulic Ejector

PENBERTHY PRODUCTS


Steam Ejector

"Safeguard" Automatic Liquid Level Gage

Automatic Injector

TRADE PENBERTHY PRODUCTS MARK

"Navy Type" Liquid Level Gage

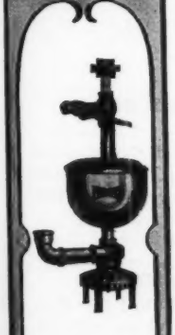
Gas Engine Lubricator

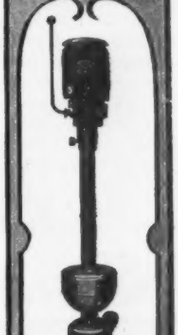
The World's Standard Since 1886

PENBERTHY AUTOMATIC INJECTOR

"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler


Automatic Cellar Drainer (Water or Steam Operated)


Automatic Electric Sump Pump

PENBERTHY INJECTOR COMPANY

*Manufacturers of Quality Products Since 1886*

DETROIT, MICHIGAN

Spring Compression Grease Cup

Plain Compression Grease Cup

Screw Plunger Grease Cup

# Natural Gas News

## A.G.A. Meeting

ATLANTIC CITY, N. J., Oct. 31.—The American Gas Association annual meeting here elected Herman Russell of Rochester, N. Y., president. He is president of the Rochester Gas & Electric Corp.

Other officers chosen included N. C. McGowen, United Gas Public Service Co., Houston, Tex., first vice president; Conrad N. Lauer, president, Philadelphia Gas Works Co., second vice president, and J. F. Rooney, assistant to the executive vice president, Consolidated Edison Co. of New York, treasurer.

Directors elected to two-year terms included: Charles W. Bennett, Detroit; Henry L. Doherty, New York; James F. Pollard, Seattle; W. E. Steinwedell, Minneapolis.

Chairmen and vice chairmen of sections included:

Natural Gas—George E. Welker, president, United Natural Gas Co., Oil City, Pa.; Robert W. Hendee, Colorado Springs, Colo.

Accounting—Herbert E. Cliff, Newark; E. J. Tucker, Toronto, Ontario.

Commercial—F. M. Banks, Los Angeles; Hugh Cuthrell, Brooklyn.

Industrial Gas—Ralph L. Manier, Syracuse, N. Y.; Hale A. Clark, Detroit.

Manufacturers—John A. Frey, Detroit; Merrill N. Davis, Bradford, Pa., vice president of apparatus division, and J. Scott Fowler, Philadelphia, vice president of appliance division.

L. B. Denning, president of Lone Star Gas Co., retiring president of the association, said:

"The sharp rise last year in the national income improved business conditions generally and the fact that the gas industry is now carrying on an intensive cooperative advertising campaign made this convention one of the most significant public utility meetings held since the boom days of 1929. Lower gas rates, modernized gas equipment and the already evidenced desire of consumers to purchase household equipment will do much to stimulate the gas industry's business within the next 12 months. We estimate that 75 per cent of 15,000,000 American homes now served by us need modern gas appliances today and we feel our industry has never faced a more promising period of development than that to which it is currently looking forward."

Air conditioning and automatic heating have brought about a "re-birth" of the gas industry, speakers said. Herman Russell, newly elected president, said that because of the development of automatic home heating "industry already has turned to gas for 12,000 heating processes."

David M. de Bard, New York industrial engineer, said air conditioning offered "year-round possibilities." He said many manufacturers were "perfecting gas air-cooling equipment."

Henry Obermeyers, Consolidated Edison Co. of New York, reported "a national trend to gas" and other speakers stressed the value of advertising.

T. J. Strickler, of Kansas City, Mo., chairman of the committee to conduct national advertising, urged local dealers to "identify themselves with every step of the national program."

W. T. Rasch, president, American Gas Products Corp., New York, was re-elected president of the Association of Gas Appliance and Equipment Manufacturers.

## Michigan Gas Deal

MUSKEGON, Mich., Nov. 2.—Consumers Power Co. agreed to purchase a portion of natural gas from Grand Rapids Gas Light Co. in the New Haven, Crystal and Sumner Townships field at a public hearing before the Public Utilities Commission in Lansing last week. Consumers will pay the Grand Rapids concern 15 cents at the wells. The agreement was reached to avoid laying two gathering line systems.

Changeover of 47,000 customers from artificial to natural gas was completed last week in Grand Rapids and the city is using about 3,000,000 feet daily compared with 5,000,000 feet natural. A suit to prevent the state from issuing an injunction to limit Grand Rapids to a 50-50 mixture is still pending.

*GEORGE E. WELKER*
*Chairman Natural Gas Department*

## New Carbon Black Company

FORT WORTH, Tex., Nov. 2.—Witco Carbon Co., an organization composed of the Wishnick Interests, Continental Oil Co. and Shamrock Oil & Gas Corp., is opening offices at Amarillo, preparatory to starting construction of a carbon black plant in Moore County. The plant will have a daily capacity of between 80,000,000 and 90,000,000 feet of gas. Location of the plant will be in the SE quarter of section 440, Block 44, H.&T.C. Survey, 8 miles northeast of Dumas and 4 miles southwest of Sunray. Curt Swanberg, vice president and general manager of the Panhandle Carbon Co., will be in charge of construction of the plant.

## Rate Hearing Delayed

AUSTIN, Tex., Nov. 2.—The Texas Railroad Commission postponed until November 12 a hearing to show cause why an ordered 8-cent reduction in natural gas rates of the Lone Star Co. should not be put in effect for the 250 communities served.

Necessary appearance of interested gas company officials in Washington on income tax matters caused the postponement, Commission Chairman Ernest O. Thompson said.

## St. Thomas Gas Service

ST. THOMAS, Ontario, Nov. 2.—Dominion Natural Gas Co. on October 12 commenced delivery of natural gas to the city of St. Thomas under a 10-year franchise, with the option of a 10-year renewal. It will pay $152,650 for the municipal distributing system.

## Texas Gas Law Test

WASHINGTON, D. C., Nov. 2.—The Supreme Court has decided to hear argument of an attack on the validity of essential provisions of the Texas state law governing production and use of natural gas brought by the Henderson Co. against the State Railroad Commission. The orders of the commission and the applicable parts of the gas-control law were upheld in a decision of a three-judge court in western Texas federal district court.

## San Diego Rate Reduction

SAN FRANCISCO, Calif., Nov. 2.—Voluntary rate reduction by San Diego Consolidated Gas and Electric Co. totaling $120,396 a year has been approved by the State Railroad Commission. Commercial lighting is the chief classification affected.

# Natural Gasoline

## California September Production

Natural gasoline production in California during September increased 1,000 bbls. daily to 40,000 bbls. daily. Refinery utilization in this period increased 3,000 bbls. daily to 40,000 bbls. daily. Stocks at the end of the month were 2,067,000 bbls., 102,000 bbls. under the preceding month, but 216,000 bbls. higher than a year ago.

The daily average production of liquefied petroleum gases decreased from 1,648 bbls. to 1,612 bbls., of which 422 bbls. were produced in refineries in September. Daily average sales increased from 1,809 bbls. to 1,855. Still-gas production during September amounted to 1,955,625,000 feet, equivalent on a B.t.u. basis to 497,171 bbls. of fuel oil.

**NATURAL GASOLINE PLANT OPERATIONS, SEPTEMBER, 1936**

| Field— | Gas treated (M. cu. ft.) | Natural gasoline produced (gallons) |
|---|---|---|
| San Joaquin Valley: | | |
| Elk Hills | 63,785 | 119,915 |
| Kettleman Hills | 10,761,458 | 15,664,538 |
| Midway-Sunset | 1,118,424 | 2,227,341 |
| Mountain View | 1,235,785 | 1,205,418 |
| Miscellaneous | 3,269,945 | 2,089,896 |
| Coastal Region: | | |
| Elwood | 669,702 | 1,002,950 |
| Rincon | 51,951 | 97,806 |
| Santa Maria | 129,605 | 372,358 |
| Ventura Avenue | 3,160,452 | 4,107,966 |
| Miscellaneous | 291,593 | 294,436 |
| Los Angeles Basin: | | |
| Brea-Olinda and Coyote | 508,524 | 1,531,053 |
| Dominguez | 1,232,156 | 2,054,998 |
| Huntington Beach | 1,602,257 | 3,631,844 |
| Inglewood | 249,991 | 315,385 |
| Long Beach | 1,869,984 | 7,521,740 |
| Playa Del Rey | 437,053 | 1,399,538 |
| Richfield | 195,455 | 397,064 |
| Rosecrans | 564,349 | 664,879 |
| Santa Fe Springs | 2,191,675 | 4,845,085 |
| Seal Beach | 505,135 | 632,894 |
| Torrance | 99,812 | 208,524 |
| Miscellaneous | 475,287 | 577,870 |
| Total (all fields) | 30,684,378 | 50,963,498 |

**DISTRIBUTION**

| | Gallons | |
|---|---|---|
| Stocks beginning of month | 2,073,383 | |
| Production during month | 50,963,498 | |
| Delivered to refineries | | 49,171,442 |
| Delivered to jobbers, brokers, or blenders | | 1,535,633 |
| Blended at plants for production of motor fuel | | 6,476 |
| Losses | | 100,668 |
| Stocks end of month | | 2,222,662 |
| Total | 53,036,881 | 53,036,881 |

| | Gallons | Barrels |
|---|---|---|
| Liquefied petroleum gas production | 1,499,788 | 35,709 |
| Motor fuel produced | 12,733 | 303 |

## Plant Begins Operation

SHREVEPORT, La., Oct. 31.—Arkansas Fuel Oil Co.'s new Sligo gasoline plant in the Sligo gas field of Bossier Parish, Louisiana, having a daily capacity of 15,000,000 feet, will be placed in operation early in November.

## United Testing Equipment

SHREVEPORT, La., Oct. 31.—United Gas Public Service Co.'s Myrtis gasoline plant, recently enlarged from 80,000,000 to 140,000,000 feet capacity, is now testing new equipment and slowly increasing daily loads. This week an average of about 105,000,000 cubic feet of gas was processed daily. Their large two-stage compressor station located on the Texas-Louisiana line will be completed within the next 30 days, and after that time the Myrtis plant will operate at full capacity.

# Pipe Line Activity

## Eastern Gas Lines

OIL CITY, Pa., Nov. 2.—Two eastern natural gas pipe lines will be completed and in use this week. These lines are owned by the Penn-York Gas Corp., subsidiary of the Cities Service Co., and involve 134 miles.

A 10-inch line begins near Wellsville, Allegany County, New York, and runs northwesterly to a point about 2 miles east of Arcade, Wyoming County, New York, 63 miles. This line is 10-inch and the work is being done by the Sheehan Construction Co. of Tulsa.

Two 8-inch lines start at the terminus of the 10-inch, one of 43 miles running westerly to Sheridan, Chautauqua County, New York, the other running north 31 miles to near East Lancaster, Erie County, New York.

The 8-inch lines are being constructed by Williams Brothers Corp., of Tulsa.

Both the 8- and 10-inch lines are electrically welded.

These lines will take gas from the Hebron, Potter County, Pennsylvania gas field and distribute it to towns along Lake Erie and east of Buffalo, served by subsidiary companies of Cities Service Co.

## Line to Fittstown Plant

Crosby & Moran. Inc., Tulsa, have awarded a pipe-line contract to J. R. Stewart Construction Co., Tulsa, to lay 4 miles of 6- and 8-inch lateral gathering lines and 4½ miles of 16-inch transmission line, this line to be lindewelded. It will supply natural gas to the Fittstown gasoline plant of Crosby & Moran.

## Pipe Line Contract Awarded

E. M. Campbell & Co., Tulsa, has been awarded a contract to lay a pipe line for Southwestern Gas Utilities from Holdenville to Wetumka, Okla., passing through Yeager. This will be approximately 12 miles long, of 6-inch, 13-pound pipe welded throughout.

## Graber Pool Outlet

WICHITA, Kans., Oct. 31.—To provide an outlet for the Graber pool of McPherson County, Kansas, Dickey Oil & Refining Co. are building a 9-mile pipe line from its main line pump station in Ritz-Canton pool. Crude will be run to the Dickey refinery at McPherson. Work on the 9-mile lateral is now under way.

## Michigan Gas Line

MUSKEGON, Mich., Nov. 2.—West Michigan Consumers Co., operating a pipe line serving 25 Muskegon industries with natural gas, is negotiating purchase of gas rights in the entire new Ravenna Township field and surrounding acreage. A hearing will be held before the Public Utilities Commission on a proposed 12-mile pipe line from the new field to Muskegon.

## Begin Talco Line

DALLAS, Tex., Nov. 2.—A contract for 20 miles of pipe line has been awarded by Lucy Petroleum Co., Dallas, to Dewey T. Ross, Inc. It will be a 6-inch oil line, lindewelded, and will use new pipe. Terminal points will be at Talco and Mount Pleasant, Tex. Work begins at once.

## Cabot Line Goes Ahead

ROCHESTER, N. Y., Nov. 2.—Cabot Gas Corp. has been authorized to go ahead with construction of its 92-mile natural gas pipe line from northern Pennsylvania to Rochester.

Supreme Court Justice Clyde W. Knapp denied the motion of the New York Central and Erie railroads for an injunction to prevent the gas firm from laying pipe under 15 railroad rights of way between Pennsylvania and Greece, N. Y. The railroads contended the lines beneath the tracks would be dangerous.

## Louisiana Lines

SHREVEPORT, La., Nov. 2.—Benedum & Trees Oil Co. has begun survey for a 20-mile oil line from its new discovery well in section 10-14-20, Nevada County, Arkansas, to Camden, Ark. This oil tests about 22 degrees.

Empire Southern Gas Co. has begun work on a 4½-inch line from Sibley, La., to Dubberly, La., to supply the latter community with domestic fuel. Right of way has already been cleared. This line will be a part of Arkansas-Louisiana Gas Co.'s Sibley system.

# Refinery Projects

## Ina Field Plant Operating

HOUSTON, Tex., Nov. 2.—Initial operation of the 400-bbl. lube plant of the Ina Oil & Refining Co. was begun last week in the Ina field of Medina County, Texas. The plant will process Ina crude exclusively when production of the company's leases in that field have been developed to furnish sufficient charging stock. At present Whitsett crude is also being run.

Operators plan the installation of a canning plant in the near future to package the oils. Ina crude yields from 40 to 56 per cent lube stock, depending on the type of cuts taken. Grades from 20 to 60 S.A.E. inclusive will be refined. The plant was recently acquired by the Ina Oil & Refining Co. from the Golden West Refining Co.

## Plan New Michigan Refinery

MUSKEGON, Mich., Oct. 31.—Plans for erection of a new 4,000-bbl. skimming and cracking plant to be erected on a 100-acre tract near Trenton, Mich., to operate on Mid-Continent crude was announced last week by the Dixie Refining Corp., a new $1,800,000 concern. The property adjoins an established marine terminal on the Detroit River. The company has leased the terminal with option to purchase so as to provide dockage for a 250,000-bbl. tanker.

Sale of 1,225,000 shares of common stock at par value of $1 a share has been approved with 1,375,000 shares to be outstanding. Organizers of the company and licensees of Dixie Distributors, Inc., a group of independents operating service stations in Michigan and other Mid-Western states, have been granted options to purchase 425,000 additional shares at $1 up to October 1, 1939.

Officers are: President, Paul R. Kempf, president of the Dixie Terminals Oil Co.; vice president, George C. Brown, consulting engineer of the Natural Gasoline Association of America; secretary-treasurer, Neil Staebler, of the Staebler Oil Co.; director, A. McGillivray, vice president of the S.T.&H. Oil Co., of Bad Axe, Mich.

## New Combination Unit Operating

HOUSTON, Tex., Nov. 2.—Corpus Christi Refining Corp. recently placed on stream a 5,000-bbl. combination skimming and cracking unit at the Corpus Christi plant. The new unit, designed and constructed by the Wyatt Metal & Boiler Works will process local crude in the manufacture of gasoline, naphthas, furnace oils and fuel oil for shipment to the East Coast. It is very similar to the unit comprising the plant of the affiliated Coastal Refineries, Inc., at Port Isabel. Coincident with initial operation of the new Corpus Christi unit, a vapor recovery system was started in operation.

## Old Dutch and Allied

MUSKEGON, Mich., Oct. 31.—Old Dutch Refining Co. of Muskegon, Mich., is expected to close negotiations with the Allied Oil Co., of Cleveland, for transportation of Mid-Continent crude oil by tanker instead of barge from Chicago to Muskegon.

## Plan Talco Refinery

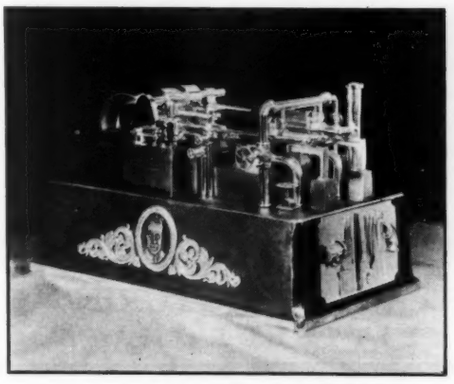
SHREVEPORT, La., Oct. 31.—It is reported that the Lion Oil & Refining Co. of El Dorado, Ark., and also the American Liberty Oil Co., of Dallas, are considering plans for a refinery in the Talco field. Lion's consideration entails a plant to manufacture by-products from Talco crude.

## Sweet Oil Increases Operations

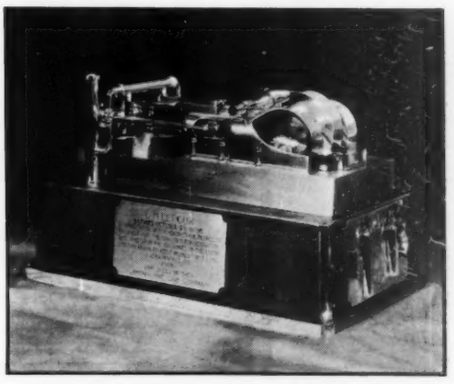
MUSKEGON, Mich., Oct. 31.—Sweet Oil Refining Co., of Wyman, Mich., recently tripled its operations from 450 to a 1,400-bbl. throughput, or about 75 per cent of its capacity of around 2,000 bbls.

New production from the Chartier Oil Co. Currie well in Isabella County about 3 miles north of the Vernon Township field made possible the increase. Crude is being moved by tank truck to Wyman.

## SILVER PUMP FOR RETIRING PIPE LINE CHIEF



*Portrait of Mr. Leroux on base*



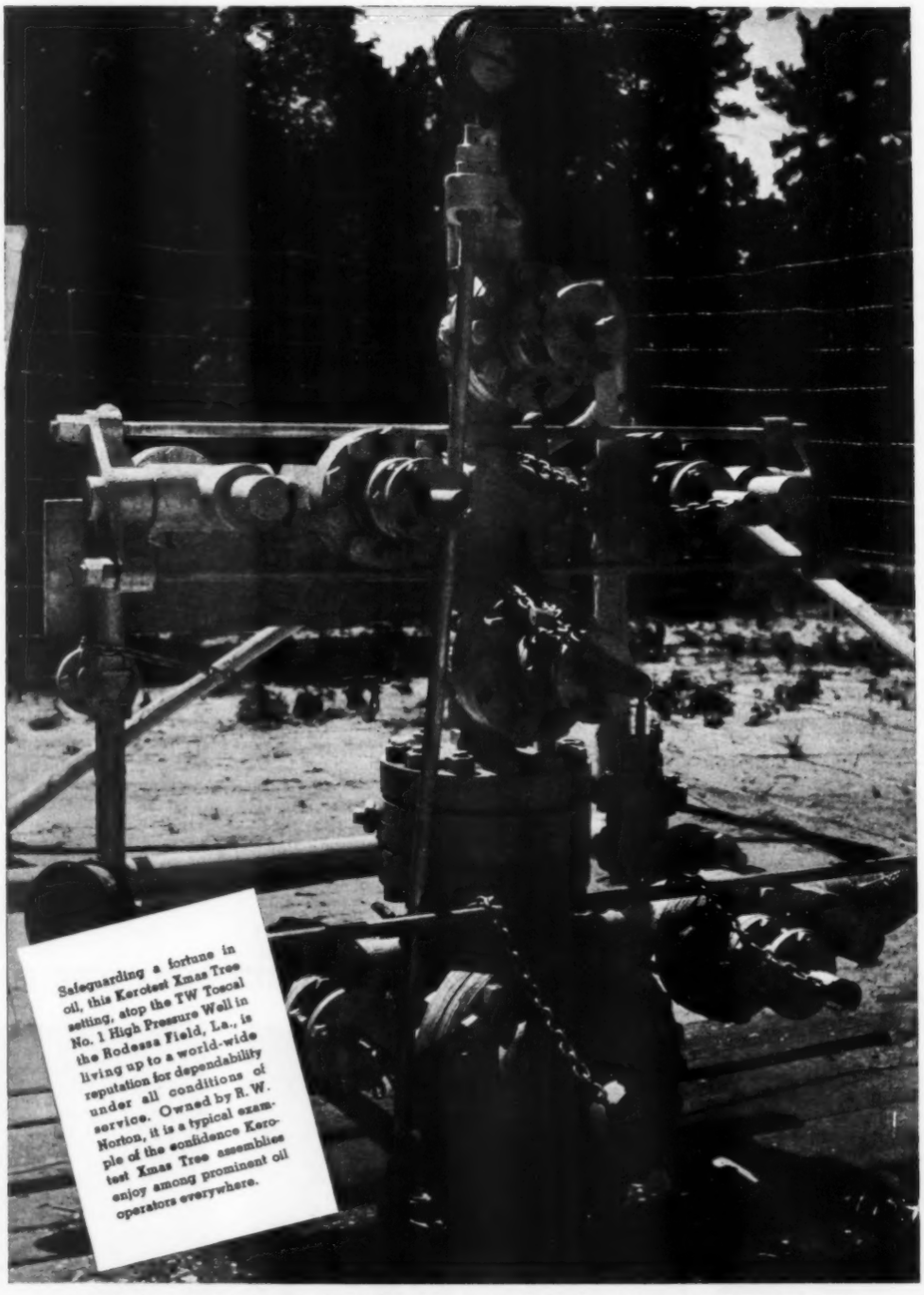
*Commemorative tablet on side*

When the employes of the Oklahoma Pipe Line Co. desired to show their esteem for E. H. Leroux, retiring president, they commissioned F. E. Ziegler, manufacturing jeweler of Tulsa, to make a silver model of a pipe line pump in the Glenpool station, with appropriate decorations symbolizing the advance in pipe line work, pipe tools and welding, since Mr. Leroux joined the company. A portrait of the retiring president occupies one side of the base and the commemorative inscription the other. The model has been on exhibition in the lobby of the National Bank of Tulsa and is now on display at the Ziegler shop, 215 Philcade Building, Tulsa.

KEROTEST

# KEROTEST

## "DOING THE JOB IN LOUISIANA"


Safeguarding a fortune in oil, this Kerotest Xmas Tree setting, atop the TW Tocal No. 1 High Pressure Well in the Rodessa Field, La., is living up to a world-wide reputation for dependability under all conditions of service. Owned by R. W. Norton, it is a typical example of the confidence Kerotest Xmas Tree assemblies enjoy among prominent oil operators everywhere.

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PA.

KEROTEST

## Heating Oil Proves Permanent Problem for Refiners

To understand what the refiner is going to be up against—and this particular problem appears to have moved in for an indefinite stay, says The Lamp, published by the Standard Oil Co. (New Jersey), it is necessary to look at what has been going on in a still comparatively new field, oil heating. The Lamp statement follows:

In 1929, there were approximately 712,300 oil burners in the United States. By the end of this year we will have 1,300,000, it is estimated. In 1929 our total consumption of gas oil and fuel oil was 433,600,000 bbls. This year it will probably reach 438,800,000 bbls. As an indication of the rapidity with which the country is turning to oil heat in both home and industry, new orders for oil burners in the industrial field jumped 21.6 per cent in the first eight months of 1936. New domestic oil burners went up nearly 49 per cent. Range oil burners increased 135.2 per cent.

There has been, and is, no question about the industry's ability to supply the vast quantity of gas oil and fuel oil necessary to satisfy this mounting demand, and at a reasonable price. But there is a refining problem involved which has an important bearing on the future stability of the business.

The average yield of gas and fuel oil from a barrel of crude last winter was 41.13 per cent. Gasoline averaged about 43 per cent. During the main consuming season for heating oil, from December 1 to March 31, approximately 146,400,000 bbls. of fuel and gas oil will have to be made from crude if we figure on an estimated draft of 11,000,000 bbls. from stocks of those products. That would involve running 356,000,000 bbls. of crude through the stills in the same four months.

Now if refiners hit their same winter average of a 43 per cent gasoline yield, that much crude would net, including natural gasoline and benzol, 168,400,000 bbls. of motor fuel. Gasoline demand, domestic and export, for the period in question is estimated at 151,800,000 bbls. Which would seem to indicate that the industry will probably add 16,000,000 or 17,000,000 bbls. of motor fuel to storage during the winter months.

Refineries have reached high peaks in throughput this year, 2,880,000 bbls. of crude a day having been charged to stills in the first eight months. Only the fact that motor fuel demand has topped even the most optimistic forecasts has prevented a dangerous piling up of gasoline stocks. As it is, there were 59,500,000 bbls. at the end of August, 15 per cent above the same date last year. Stocks of all products were 13,300,000 bbls. higher than on January 1, just about offsetting the amount of crude taken out of storage. Obviously, the industry cannot risk more than a very slight increase in gasoline stocks during the cold weather season.

There is another reason why the refining branch—and producers, too—face today the necessity of modifying the traditional practice of piling up such large quantities in winter for summer months. The oil business is gradually approaching the stage where seasonal swings, the peaks and valleys of consumption, will be pretty much leveled out. The call for motor fuel or heating oil will vary, but the total demand for all products, winter and summer, is becoming more uniform.

Between the May-October period in 1928 and November-April in 1928-29, there was a difference of 101,000 bbls. in the daily average domestic demand for crude and products.

Between the spring of 1931 and the winter of 1931-32, at the bottom of the depression, this seasonal swing had risen to a difference of 352,000 bbls. daily.

By 1933-34 the fluctuation had abated to 56,000 bbls. In 1934-35 it was 18,000 bbls. Last year only 5,000 bbls. daily separated the average winter and summer consumption of crude and products.

To a great extent this progress toward stabilization can be attributed to improving business as the country worked its way out of the slump. But the increasing trend toward all-year travel and the growing use of oil burners are likewise important factors and ones which are likely to be permanent.

Fuel oil versus gasoline—what is the refiner going to do about it? The more crude he runs to satisfy the demand for gas and fuel oil, the more gasoline tends to pile up at the refinery. There are two fairly obvious courses, both more or less common practice, but needed now in a much more widespread and accurately measured degree:

1. Refineries can afford to store only a moderate amount of gasoline during the winter as long as seasonal swings in the demand for this product are on the wane. They can, on the other hand, adopt the policy of building up a reasonable amount of gas and fuel oil reserves during the warm weather in order to be in a position to supply the peak winter demand without running too much crude to stills and thereby piling up unneeded gasoline stocks.

2. In the cold weather months it would appear to be sound policy to crack less gas oil for gasoline than has been customary in the past, diverting it instead to heating oil use and depending more upon reforming, natural gasoline blending and other measures for maintaining octane requirements of motor fuel during the winter.

With the job ahead of filling heavy orders for fuel this winter and at the same time preventing gasoline stocks from getting out of hand, the industry can take a long step toward consolidating its hard-won gains and present favorable condition by beginning now to modify its refinery operations so as to divert more gas oil to distillate fuels, scaling down proportionately on gasoline as the demand for that product slacks off during the winter season.

## Edmond Production Order

An order regulating production of oil from the Edmond pool, Oklahoma County, is sought in a petition filed with Oklahoma Corporation Commission by Blackstock Oil Co., set for hearing November 10. The petitioners ask an order requiring all wells now drilled and not tubed, be tubed within a reasonable time; that wells hereafter completed be tubed as soon as potentials are established; that daily production of all wells be through tubing, and that the tubing be not more than 2½ inches in diameter and set at or near bottom of the production string of casing.

## *OBITUARIES*

**JOHN R. HAYES,** 56, oil producer, died unexpectedly in Wichita, Kans.

**JONH R. HAYES,** 56, oil producer, Wichita, Kans., died October 28.

**WILLIAM ELLSWORTH LEE,** 69, Houston, Tex., oil man, died October 28. He was born January 31, 1867, in Petroleum, W. Va. He moved to Saratoga, Tex., in 1904 and later to Sour Lake. He was a stockholder in the Yount-Lee Oil Co.

**HERBERT R. SHELDON,** 73, a retired officer of United Natural Gas Co., Oil City, Pa., died recently. He had been assistant treasurer for 25 years prior to retirement three years ago. He was born in Jamestown, N. Y., Sept. 2, 1863. He entered the employ of Ohio Oil Co. in 1889, and in 1902 joined East Ohio Gas Co.

**ANDREW BENNETT,** 78, at one time employed in the Petrolia field and later engaged in a government survey in western Canada, died at Petrolia, Ontario, recently.

**JOSEPH D. (PEG) THOMPSON,** 63, of Petrolia, Ontario, died recently at the Rangoon, Burma, general hospital. Learning the drilling trade in the Petrolia field, after 1901 he drilled in Cuba and Egypt, and for 20 years in India and Minbu, Burma. Melvin Thompson, driller, in the Trinidad fields, is a son.

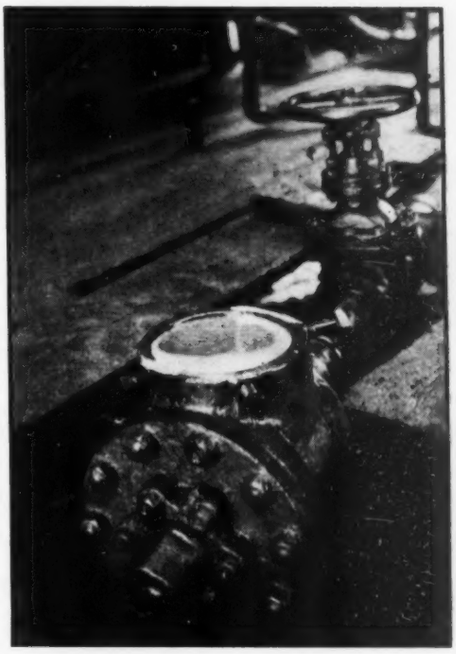
**HOLLAND S. REAVIS,** 60, founder and publisher of The Oil Investors Journal at Beaumont, Tex., which was the predecessor of The Oil and Gas Journal; The Oil Trade Journal, in New York and The Petroleum Register, was found dead at his estate, Mount Saint Angelo, Virginia, on October 27. He had been in ill health for some time.

## TWO NEW OIL POOLS

*(Continued from Page 27)*

zone from 3,918-20 feet. The well was bottomed at 3,926 feet.

Other wells being started near this strike are: Stewart No. 1 Eschenbach, in the SE quarter of section 6-16n-4w, on a lease farmed out by Stanolind Oil Co.; and McClanahan No. 1 Robinson, in the SW quarter of section 31-17n-4w, in Clare County. Since the discoverers have a block of 2,700 acres leased in the immediate area, and 80 additional acres held by Shell Petroleum Corp.



*Oil, 47-gravity, bubbling from control head of Pure Oil Co. No. 1 Embrey*

have been farmed out to them, the development may resemble that expected in the more recently discovered pool, 16 miles southwest. The spacing will be 20 acres per well.

A pessimistic viewpoint may be taken toward the productive life of both of the new pools, since the pay is dolomitic in both cases. While it is apparently of small importance whether this is Dundee or Monroe, it is important that it is dolomite and not limestone, because older dolomite pools have experienced far more serious water encroachment than have the limestone producers. Thus, the most serious water problems are now found in the Vernon and Crystal pools, where the pay was found from 1 to 10 feet from the top of a dolomite formation. The water encroachment is less serious in the Porter, Mount Pleasant, Muskegon, Yost-Jasper, Leaton, Beaverton, and Buckeye field; and the West Branch field has experienced no water troubles. In all of these pools the pay was found from 25 to 120 feet from the top of the Dundee limestone.

Pure Oil Co. is taking the oil from both discovery wells. From its own well it is pumped with a centrifugal pump through a 4-inch line to a spur on the Pere Marquette Railroad where it is loaded into tankcars. A pipe line also serves the Chartiers well. Since there is no proration in Michigan, the only limiting factors are the well capacities and the ability to transport the oil rapidly.

## Rodessa Ratio Hearing

SHREVEPORT, La., Nov. 2.—Gov. Richard W. Leche is expected to call a joint meeting of Rodessa operators and heads of the Louisiana Pepartment of Conservation in his office on or about November 16 to consider a permanent proration order for the Rodessa field. The Operators' Engineering Committee is assembling information upon which to base its recommendation for this gas-oil ratio restriction and proration order.

# the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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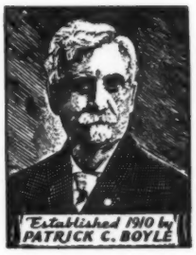


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# *Identifying Themselves*

It is unfortunate that a certain group representing a very small fraction of the 10,000 or more oil jobbers throughout the country, but pretending to speak for the entire jobbing membership, which it does not do, should have seen fit to place itself on record as opposed to everything that has been done to stabilize the business from which the jobbers have benefited as well as the rest of the industry.

The antagonistic attitude assumed by this group against the Interstate Oil Compact for the regulation of production by the states and against the Connally Act which prevents the shipment of illegally produced oil in interstate commerce is in direct opposition to the view of the oil industry at large.

That this group should also declare its opposition to any code of marketing practices, unless its special interests come first, is in keeping with its general attitude which declares that the oil jobber of its particular stripe is separate from the oil industry.

The industry welcomes that distinction. It explains the efforts of this group to embarrass the industry in the hope of securing concessions which are not justified, and in the sponsorship of statements used against the industry.

There is a genuine community of interest between the thousands of real oil jobbers and those who are mainly responsible for the production, transportation and refining of petroleum. Their interests are identical.

Unfortunately, conditions for which the oil industry was partly responsible arose during the overproduction period which contributed to unhealthy marketing practices. One aspect was the unprecedented terms granted by refiners in their anxiety to get rid of gasoline, guaranteeing the jobber a definite margin on which to operate regardless of price conditions.

It is now recognized by the industry and by the great majority of the jobbers that this is a practice which should never have been inaugurated and of no benefit to the jobber in carrying on merchandising on the sound basis of large volume at low cost.

One of its effects was to attract into the industry an element which had no permanent stake or interest in it, seeking only the opportunity for profit thus presented. This element, of course, has no compunction about defiling its nest by assailing the industry. It wants no code of marketing ethics. It fears stabilization will deprive it of some undue advantage. Therefore, it is against the interstate compact, the Connally law and any program that tends to put and keep the industry on a sound foundation. It battens on the industry's sores.

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STRAIGHT RUN gasoline is a knockout—but it's never a winner

It knocks the motorist out of patience It knocks you out of gallonage and profits—it knocks itself out of the market

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Dubbscracked gasoline is the best kind of gasoline to make and to sell

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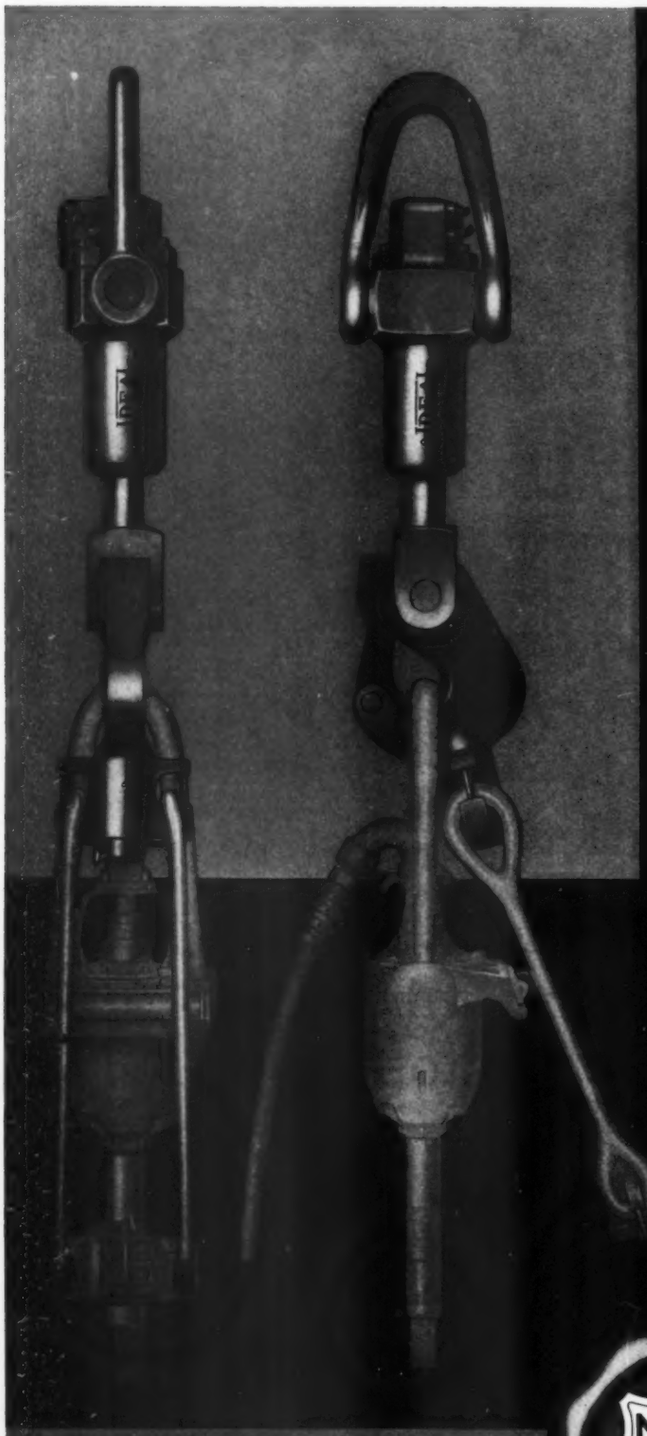

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The Ideal Universal Rotary Hook Type B-30 makes available for the first time a hook, with all load carrying parts of forged steel, for the independent support of swivel bail and elevator links.

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*National*

# Oil News from Foreign Lands

## Gravimetric Method Difficult

Among the various geophysical methods of prospecting for oil in Rumania the gravimetric method alone seems difficult to use. There are several reasons for this. One is that the presence of hills creates important and delicate topographic corrections, since the precise density of the formations of which the hills are formed is unknown.

RUMANIA

Furthermore, the Sarmatian sediments and the older deposits are not in accord with the Pliocene tectonics, which complicates the interpretations of the measurements provided by a method whose investigation depth cannot be adjusted at will. The gravimetric method seems to have met with failure in the Ditesti district, where a deep drill-hole did not encounter the expected structure.

Geophysical surveying in Rumania began before the World War. At the close of 1933 four parties using the electric methods, one reflection seismic party, and two gravimetric parties were working in the Walachia oil country.

The Bucsani structure, which promises to be one of the most important in Rumania, was discovered as a result of exploratory work done by la Compagnie Generale de Geophysique, parent company of the Schlumberger Well Surveying Corp.

## Stabilizing in the Field

Removal of extremely light ends, usually lost in transportation or storage, and hydrogen sulfide from crude oil at the field end of the Iraq Pipe Line Co. system handling petroleum produced at Kirkuk, Iraq, is now in process. Stabilization of crude before delivery to pipe lines is not novel, but probably has not been attempted previously on the scale now under way at Iraq. The removal of $H_2S$ (amounting to approximately 2 per cent in Iraq crude) was made desirable and necessary for two main reasons. In the first place, the sulfur's corrosive action on pumps, pipe lines, tankers and refinery storage tanks presented an expensive maintenance item. Furthermore, refineries located in or near European cities operating on Iraq crude were the objects of much criticism and even litigation due to offensive odors liberated in refining and handling of the oil.

IRAQ

In an effort to solve both problems, the crude oil stabilization plant in the Kirkuk field was ordered constructed a year and a half ago after careful study of the objectives. The plant, capable of handling the entire current yield of the Kirkuk field and constructed along lines lending easily to expansion, was placed on test stream last month. The plant was designed and constructed by Foster Wheeler, Ltd., European subsidiary of Foster Wheeler Corp., New York, in the contract period of 15 months.

Materials were fabricated and manufactured in Great Britain, the United States and France. Shipments to the plant site were made via Basra and overland by railroad to Kirkuk crossing the Tigris at Bagdad. The plant is designed to operate on a liberal range of temperatures and pressure intended to provide a liberal range for operation.

Details of test run results have not reached this country, but general information indicates that the plant is meeting the requirements for which it was designed and constructed.

In the main, it may be said that the temperature application will be slight, but in stabilizing the crude to the desired degree and in removing a maximum of the sulfur content, the effect will be a partial refining process. Determination of the temperatures and pressures required to meet the objectives will determine to what extent distillation will take place at the intake end of the Iraq Pipe Line Co. system leading to loading facilities at Tripoli and Haifa.

## Continental Mexican Gas Well

One of the largest recent gas well discoveries in northern Mexico has been brought in by Continental Oil Co. with completion of No. 5 Zacate for 10,000,000 feet of gas daily. The well in the state of Tamaulipas, just across the Rio Grande from McAllen, Tex., is on a concession in which Continental has 278,270 acres under lease, and is so located as to provide an immediate market for gas in the city of Monterrey.

MEXICO

Producing from the Cockfield formation, the well encountered gas from 3,512 to 4,090 feet. Casing pressure is 520 pounds, and tubing pressure is 500 pounds.

Continental's operations in the southern republic are directed by its subsidiary, Consolidated Oil Companies of Mexico, which has concessions totaling 859,306 acres. Of this acreage, 276,110 are located just west of Panuco in the state of Vera Cruz, with 42 producing oil wells, and 583,196 acres are in the states of Nuevo Leon and Tamaulipas, in northern Mexico.

## Production in Iran

After a temporary lull in crude oil production for July, Iran again contributed more than 5,000,000 bbls. during August. The August production of 731,000 tons, roughly 5,117,000 bbls., was 245,000 bbls. above the July yield, but lacked 259,000 bbls. of equaling this year's record month. The production in August boosted Iran's production for the first eight months of 1936 to 5,516,000 tons. The country appears headed definitely for a new producing record. During the first eight months of 1935, Iranian crude production amounted to 4,353,000 tons and to 5,061,703 tons for the first eight months of 1934.

IRAN

*Core drilling in Netherland East Indies*

## Exploration in Brazil

Exploration for petroleum production in the Riacho Doce area, near Maceio in the state of Alagoas, Brazil, probably will be launched in the near future either by private groups or through government sponsored interests. Although the probability of Riacho Doce exploration is based on a report lacking negative findings rather than on one of strong affirmative nature, it is considered adequate to attract action. The geophysical survey conducted over a portion of the Riacho Doce district was made by Piepmeyer & Co. of Cassel, Germany. The report submitted to the government, translated freely, reads:

BRAZIL

"Considering that no indication contrary to the existence of petroleum was encountered in the Riacho Doce area and considering that the various conditions considered necessary by petroleum experts are manifest and in some cases very favorably present, it is our opinion that the state has good reasons for its hopes of petroleum in the Riacho Doce area."

About 30 kilometers northwest of Riacho Doce, indications of petroleum existence have been reported for weeks by residents of that district. The Alagoas state administration is said to be considering the commissioning of the Piepmeyer group for a study of the Rio Largo district.

## Argentina's "Inspection Tax"

An "inspection tax" amounting to about 1⅓ cents per gallon, in American currency and liquid measurement, must be paid by all marketers doing business in Buenos Aires, Argentina, within 30 days. The new Buenos Aires city tax ordinance was signed last week by the city's mayor and will be applied to approximately 100,000,000 gallons of gasoline per year. The volume is the estimated consumption in Buenos Aires based on previous data. The Buenos Aires city tax ordinance is thought to be a "whip' held over the two American and one Dutch companies to force them into acceptance of a marketing agreement to become effective on unanimous approval. The proposed agreement calls for allocation of quotas on a basis of 1935 volume with subsequent increases to be turned over to the government controlled Y.P.F. company.

ARGENTINA

The foreign companies marketing in Argentina are Standard Oil Co. of Argentina (Standard of New Jersey), the Texas Corp. and Royall Dutch-Shell.

## Socony Sells Equatorial

Control of Equatorial Oil Co., a Delaware corporation, has been sold by Socony-Vacuum Oil Co., Inc., to a group of New Yorkers. Socony-Vacuum sold 59 per cent of the stock and disposed of a pending claim of $203,569. The Equatorial property consists of exploration and production on approximately 29,000 acres in the Magdalena River basin, joining the Barco concession in which Socony-Vacuum is also interested. Socony-Vacuum interest in Equatorial was obtained when it joined Texas Corp. in purchasing about 79 per cent of the stock in Colombian Oil Co., owner of the Barco concession.

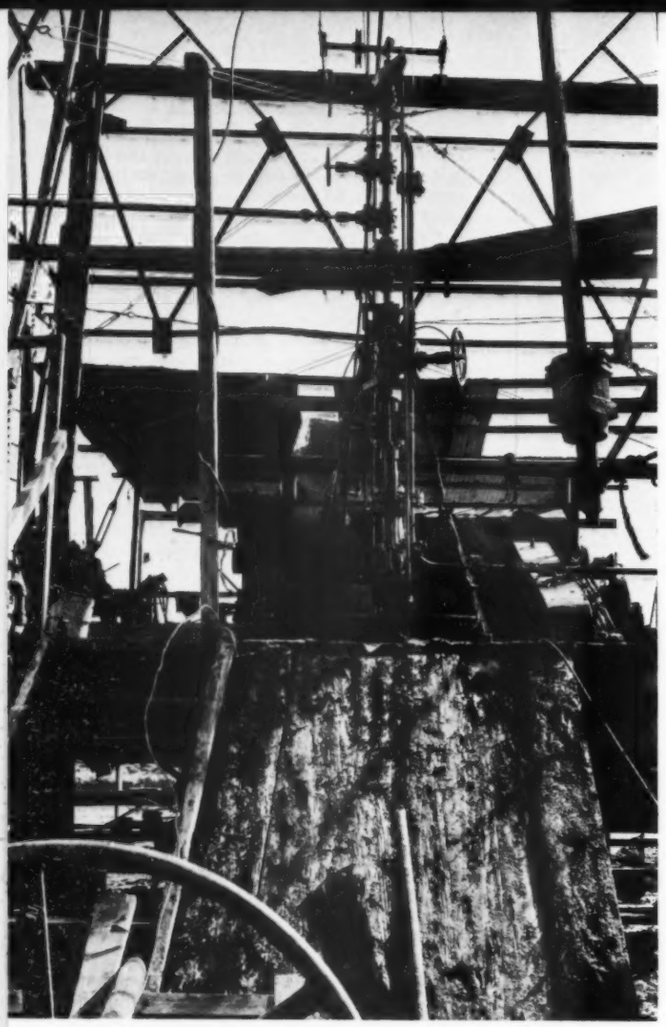
COLOMBIA

## Progress in Kowait

Drilling has proceeded to 3,472 feet in Kowait Oil Co., Ltd. No. 1 Bahrah, wildcat on the northwest end of the Persian Gulf being drilled jointly by Gulf Oil Corp. and Anglo-Iranian Oil Co. Ltd. At present depth, the test is in black shale and lime, tentatively identified as the upper part of the Lower Eocene. Operators are of opinion it will reach the Cretaceous beds around 3,800 feet.

KOWAIT

# 5,000-Pound Gas Controlled in Gulf



*Hookup to bleed high-pressure gas from drill pipe on Stanolind Oil & Gas Co. No. 1 Candelari, Gulf Coast wildcat*

## By NEIL WILLIAMS

Gas pressures up to 5,000 pounds have been controlled successfully by Stanolind Oil & Gas Co. in the completion of its No. 1 Angelo Candelari, a wildcat test on the Greens Bayou Prospect, just northeast of the Houston city limits. Such great pressures have never been encountered before in any other well. Considering the depth of the well, such pressures are radically abnormal, and not having been anticipated by provision of special equipment, conquering them and preventing loss of the well is looked upon as an outstanding achievement in well control.

The well blew out on the morning of October 19 while a core was being taken with a wire-line core barrel and the bottom of the hole at 8,101 feet. The gas came with little warning for when the core was being taken the hole evidently cut into a crevice or cavity resulting in loss of all the mud, leaving the gas to come through a clean hole. In the well was 7,499 feet of 7-inch casing, on which was a Cameron blowout preventer. This was closed around the 3-inch drillstem in the hole. Although the pressure built up to between 4,700 and 5,000 pounds, the preventer, which was only 3,000-pound test equipment, held, effectively sealing the annular space in the casing.

However, to kill the gas through the drillstem there was nothing except pump pressure, and the pressure of the well was too great for the pumps to overcome. A Halliburton cement truck, which built up a back pressure of 4,800 pounds, failed to make an impression. At that point the rotary hose broke, preventing further attempts to pump. The break in the hose was at the standpipe end, which resulted in the hose doing much whipping before finally straightening out to permit the well to flow freely.

Controlling the well at these high pressures under such conditions tested the ingenuity of those in charge to devise means and provide adequate equipment. Although luck played an important role, the precision and calm with which the operators tackled the job, and the ability of the well control equipment to hold, although not designed or built for such abnormal pressures, were largely responsible for the success.

When the rotary hose broke, and efforts to pump Baroid into the hole failed, operators immediately set about providing connections to produce, or bleed, the well. The first step was to remove the kelly and swivel which was done in face of the high pressures. Next came the difficult undertaking of connecting a safety joint on the drillstem to replace the kelly. M. M. Kinley Co. was given this job.

This unit consisted of a short section of 3-inch drillpipe with a 3-inch male tool joint on the bottom and a 4-inch, 6,000-pound test gate valve on top, connected through a 3- by 4-inch hydraulic swage. On top of the master gate was a 4- by 2-inch swage to two 2-inch, 5,000-pound test valves with nipple and tee. With the valves open, this was swung into position, and, while held with great difficulty over the blowing gas, it was stabbed into the 3-inch drillpipe and screwed into place, allowing the gas to blow out the top. It was anchored securely from two elevators clamped around the joint; one just above the master gate and the bottom just above the tool joint.

### MASTER GATE

By closing the master gate on the connection, the well was shut in. Fortunately, all the fittings held, although, due to the exceptionally high pressures the operators realized most anything could happen without warning. Another break for the company was the absence of sand with the gas. Had the well made any sand, which it could have done in view of the 602 feet of open hole at the bottom, the connections might have cut out and all attempts to control the well would have been impossible.

Due to the high pressure on the blowout preventer, a hookup was devised to bleed the gas from annular space in the 7-inch casing. A four-way manifold with 6,000-pound test valves was set up some distance from the well, connected with a 2-inch line of hydraulic pipe from the casing outlet. In each course of the manifold a different sized choke was set, one being one-quarter inch; another, one-half inch; the third, seven-eighths inch, and the fourth, an open line. From the outlet of the manifold, a 2-inch line, also of hydraulic pipe, was laid to a riser some distance away.

When the casing outlet was opened, the pressure recorded was 4,700 pounds. This dropped within 20 minutes to 1,500 pounds, the gas being bled through the one-half inch choke, and then the casing was shut in. In this drop it was indicated that the hole had been bridged between the 3-inch drillpipe and the 7-inch casing, and that pressure in the casing had been due to tool joint leaks in the drillpipe.

### ADDITIONAL SEAL

In view of this fact it was decided to attempt to pump some Baroid into the annular space to provide an additional seal. A total of 487 sacks of Baroid, mixed only with water, was lubricated in without trouble. Due to the weight of this column, calculated around 6,350 pounds, it was not deemed advisable to put any more Baroid in for fear of breaking out the bridge and letting in gas from the bottom of the hole.

Due to the leaks, the gas continues to build up pressure in the casing, but every time the pressure reaches 2,500 pounds, the casing is opened, allowing the gas to bleed off to a pressure of around 1,500 pounds.

With the pressure in the casing taken care of, attention next was directed toward bleeding the gas through the 3-inch drillpipe. As the connections which had been placed on the well above the master gate were not considered adequate, they were replaced with a hookup of four 2-inch 5,000-pound test valves. In this, the top valve functions solely as a gauge valve to close the top of the tree. The bleed-line takes off just below the top valve, leaving three valves in addition to the master gate with which to close in the well, extra valves having been provided as a precaution against the failure of any one of them. Nipples between the valves and the bleed-line are of hydraulic pipe to insure an additional safety factor.

The bleed-line leads to two Hughes 10,000-pound test gate-valves set up on the ground at the side of the well. From each of these, a 2-inch line of hydraulic pipe is laid to risers.

To relieve the pressure gradually, a succession of three chokes were set in each line. Although various size chokes can be placed as desired, the present installation in each line consists of a one-

*Setting up the separators to complete the wildcat. The 5,000-pound pressures encountered when the well was brought in were the highest ever recorded and radically abnormal considering the depth of the well*

# Pressures Wildcat

quarter inch choke placed 80 feet from the gate, a three-eighths inch choke 60 feet farther out, and a three-quarter inch choke 60 feet still farther out. From the last and largest choke to the riser is open 2-inch line. It was calculated that the expansion from the first choke would reduce the pressure from 4,000 to 2,000 pounds; the second, 2,000 to 1,000 pounds, and the third 1,000 to 500 pounds.

The lines from the 10,000-pound gates are heated with live steam injected, at the gate end, into the 4-inch pipe shells in which the two 2-inch hydraulic pipelines are laid. These shells, sealed at the gate end, enclose the 2-inch pipe a distance of approximately 260 feet. Sharp angles have been avoided in the bleed-line leading from the well to the two gates to minimize the possibility of trouble there. In operation, the well can be bled through either or both lines. The gates are operated by remote control.

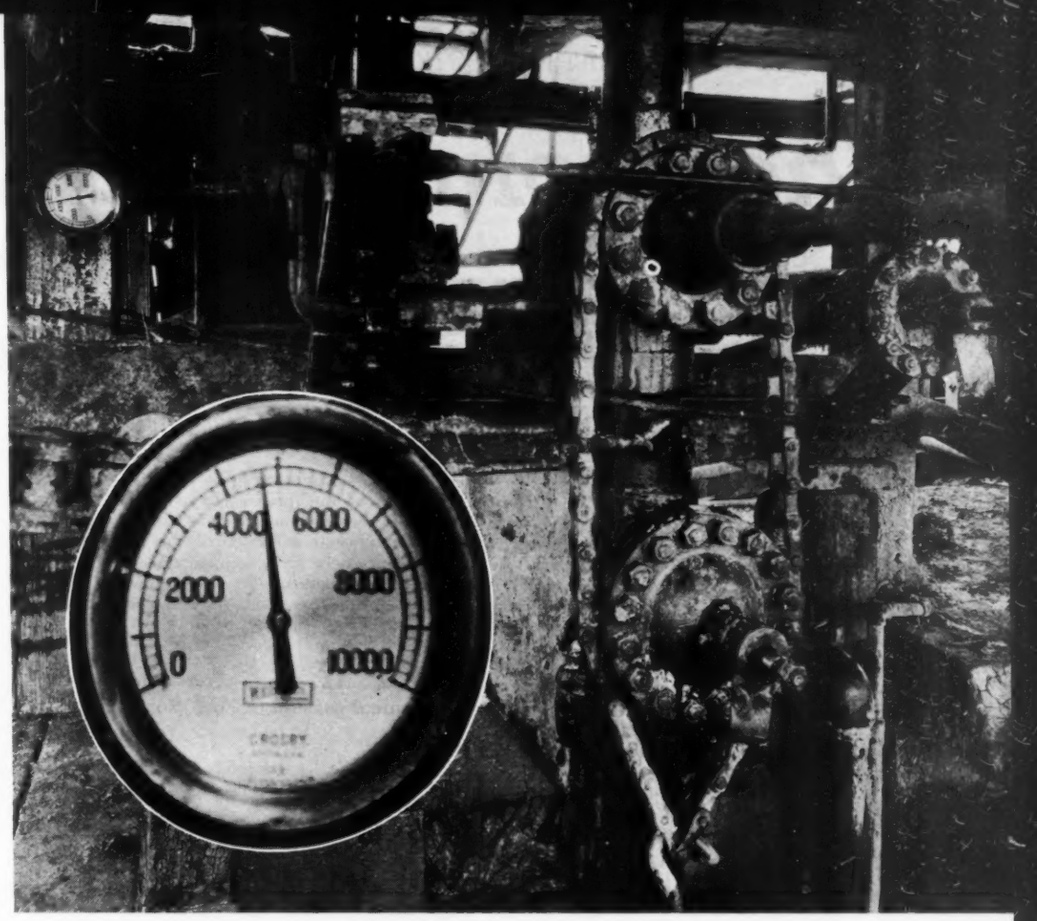
### *SHUT-IN PRESSURE*

The shut-in pressure of the well was 4,800 pounds. The well was opened first only into one line, which resulted in a sharp drop in pressure to 4,400 pounds. This pressure held steadily until the second line was opened when pressure dropped to 3,900 pounds. It was the intention of the operators at the time to permit the well to bleed off several days on the chance the pressure might drop off enough that an attempt might be made to kill the well. However, since the pressure has built up some, and in view of the fact that gas has indicated an increasing distillate content, it has been deemed advisable to attempt to complete the well as it is. Storage has been provided and separators are being set up on the lines.

No effort will be made to change the well or to shut it in as long as the present pressures exist. This leaves the well to be produced with 602 feet of open hole below the 7-inch casing at 7,499 feet, and with the 3-inch drillpipe and the bit in the hole. With the opening of the well and relief of some of the pressure and consequent contraction of threads on the fittings, leaks increased but with the placing of leak clamps hazard from this trouble has been reduced.

Because some trouble had been experienced through leaks in the connections in the control head the valves were changed and new material added and the well is now producing at an estimated rate of 11,000,000 feet of gas per day through two one-quarter inch chokes on 2-inch lines running from the head above a set of two 3-inch high-pressure gates. This change in connections was made during the night of November 2 and the operators feel that this well is under control unless it should start to produce sand. The shut-in pressure was sufficient to set the needle on a 5,000-pound pressure over against the pin so it is at least maximum pressure of this gauge.

In attempting to account for the radically abnormal pressures, operators are theorizing that the bottom of the hole is in contact with an open fault plane or crevice, through which high-pressure gas is being fed from some lower horizon. Engineers have calculated that such pressures exist normally with the hydrostatic head at a depth of 10,800 feet,



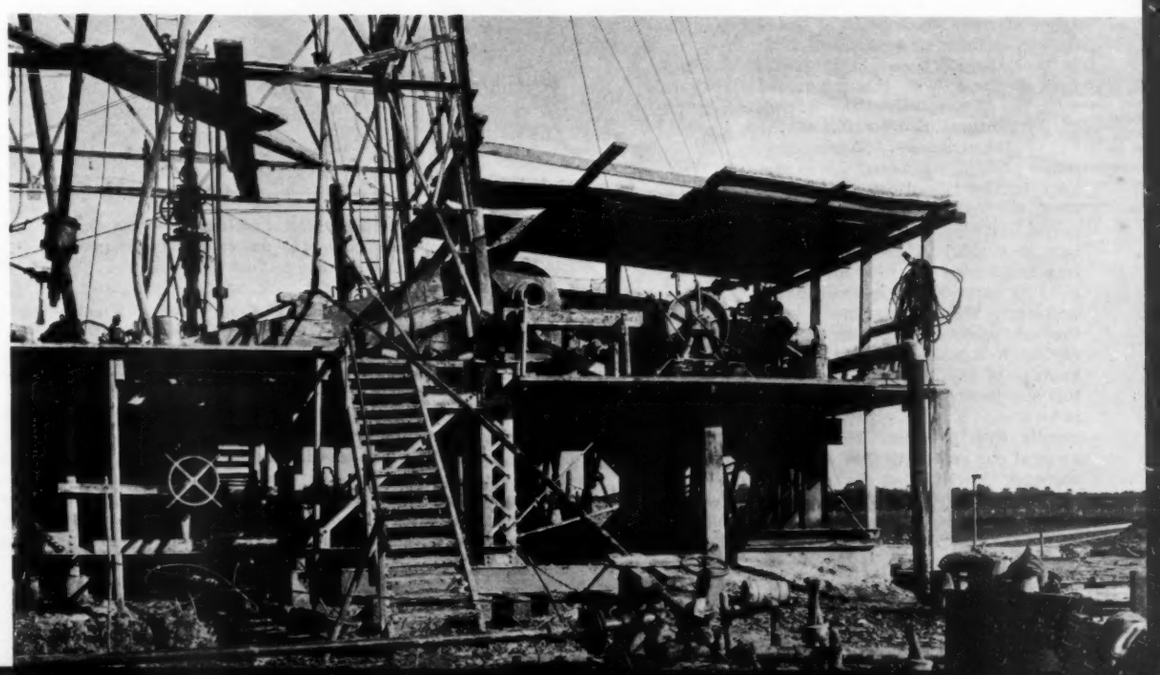

***Seven-inch blowout preventer, designed to withstand 3,000-pound pressures, holding a 4,700-pound casing pressure (as indicated by the gauge) on Stanolind No. 1 Candelari***

and could not exist at the 8,100-foot level naturally. From the bottom of the casing to the present depth no formations were encountered which gave any indications of high pressures. The fact that all the mud was lost in the hole before the blowout substantiates the belief that the well is in a crevice or cavity of some kind.

The theory that the gas is coming into the bottom of the hole through a crevice is not held by all who have had opportunity to study this very high-pressure gasser. The hole had penetrated into a sand about 1 foot when they started out to put on a core barrel and the gas broke through from the top of this sand body. It therefore is the opinion of some that the well is bottomed in a very permeable sand and is draining gas from a wide area. While the pressure registered does not coincide with the hydrostatic pressure calculated for 8,100 feet depth it does not follow that the gas could not be under very high pressure at this depth.

As the sediments penetrated in the hole above this sand were loose and consolidated it hardly seems probable that a crevice would have been left in the lower strata. It might be possible, but nothing observed at the well indicates that the hole struck a crevice, and as other wells in the Gulf Coast area have found gas at pressures in excess of theoretical hydrostatic pressure it might be logical to assume this gas is under high-pressure because of some other condition. If gas had been formed and the strata was deformed after it had accumulated it would be possible to compress this gas to extremely high pressures. It also might be that during the formation of the gas by chemical reaction very high pressures were created and have never been relieved until the hole penetrated into the top of the formation.

***Hookup of two 10,000-pound test valves with the bleed-line from the well. The vent lines to the risers lead to the right behind the instrument***



# The Economics of Gasoline Versus Tractor Fuel

By C. G. KRIEGER
Ethyl Gasoline Corp.

The internal combustion engines on the 6,500,000 farms of the United States consume approximately 4,000,000,000 gallons of motor fuel per year. This figure includes the fuel used by 4,134,675 passenger cars, 900,385 motor trucks, 3,000,000 stationary engines, and 1,250,000 tractors.

Approximately 18 per cent of all the passenger cars and 26 per cent of all the motor trucks in the United States are registered on farms. These two types of farm vehicles alone consume more than 2,500,000,000 gallons of gasoline per year.

The average fuel consumption per year for the average farm tractor is approximately 1,000 gallons. Since there are 1,250,000 tractors on farms, the total annual fuel consumption of agricultural tractors in the United States is approximately 1,250,000,000 gallons.

The 4,000,000,000 gallons of motor fuel consumed on farms is approximately 22 per cent of the total annual United States consumption.

### DISCUSSION OF FARM TRACTORS

Since this paper deals primarily with the subject of farm tractors, further discussion of the fuel market for farm automobiles and farm trucks will be omitted, and the text will be confined strictly to the subject of farm tractors and tractor fuels...

Most farmers would like to use one grade of fuel for their cars, trucks and tractors. To insure that the farmer would use a good grade of gasoline in his automobile and truck, it appeared that it would be necessary that he also use a good grade of fuel in his tractor. Working on the assumption that the farm tractor presented the key to the total farm fuel market, it was decided to start a research program to study the fuel requirements of present tractors as well as to determine the extent of the possibilities presented by the incorporation of high-compression design in farm tractors, all of which at that time were powered with low-compression engines. The fundamental objective of this initial research program was to determine whether or not the Ethyl Gasoline Corp. possessed a sound economic justification for developing business in the farm tractor market.

Consequently several makes and types of farm tractors were tested by our engineering department, both in the laboratory and in the field. One of these tests was conducted with the cooperation of the Bureau of Agricultural Engineering of the U. S. Department of Agriculture. After working constantly for over a year in the laboratory and in the field, our engineers found that the power output of many farm tractor engines could be increased approximately 30 per cent with an accompanying improvement in specific fuel economy. This improvement was made possible through increasing the compression ratios of the engines to a point sufficiently high to take full advantage of the antiknock value of 70 octane gasoline and through reducing the intake-manifold temperatures to a point sufficiently low to get the best results with gasoline. The results of these tests assured our engineers that we did possess a sound economic justification for developing business in the farm tractor market. A discussion of some of the problems in the farm tractor field follows.

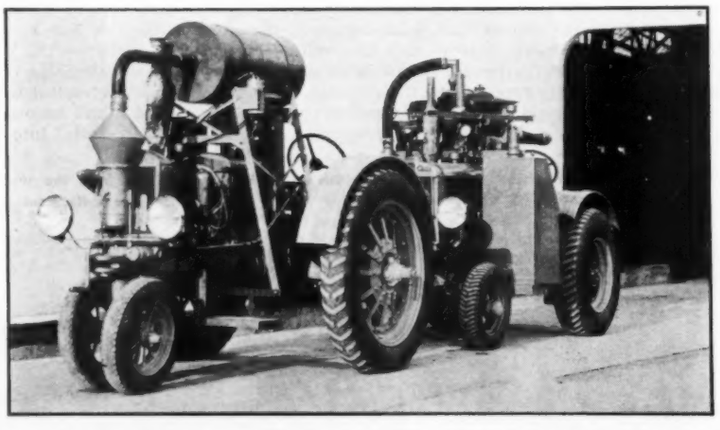
In the past, about 95 per cent of the tractors in the United States have been designed to operate on any of the three common "tractor fuels"—distillate, kerosene, or gasoline. In order that engines may operate satisfactorily on such essentially different fuels, it is necessary that the general design of the engines be of a "compromise" nature. Intake manifold temperatures must be high in order to vaporize the low-grade fuels, and the compression pressures must be low so that excessive detonation will not occur when kerosene and distillate are used.

***W.P.R.A.*** **—Presented before technical session at Fort Worth, Oct. 27**

Today the compression ratios of passenger-car engines are sufficiently high to make good use of the antiknock value oil companies are putting into good gasolines.

Current tractor engines present quite a different picture. As previously stated, practically all tractor engines until recently were designed to operate more or less satisfactorily on any fuel which the farmer might happen to use. With such a "compromise" design, the engine must be capable of running on the lowest grade fuel to be encountered. The average antiknock rating of kerosene is zero octane number. Most fuels coming under the general classification of distillate vary in antiknock quality from zero to 20 octane number. In some sections of the country, distillate with an octane number as high as 30 or better is available but this is the exception rather than the rule. It can readily be seen that an enormous increase in power can be obtained by changing from a compression ratio sufficiently low to accommodate a zero octane number fuel to one sufficiently high to take full advantage of the antiknock value of 70 octane number gasoline.

Compression ratio is not the only factor of tractor engine design that offers room for great improvement when 70 octane gasoline is used exclusively for fuel. The factors of carburetion and distribution are also of great importance. It is not uncommon for distillate fuels to have an initial boiling point of 350° F. and an endpoint of 600° F. or even higher. In order to burn these heavy fuels an extremely hot manifold must be used. Intake-manifold temperatures as high as 250° F. or higher are often observed. These high intake-manifold temperatures reduce the volumetric efficiency of the engine materially. Intake-manifold temperatures of well over 100° F. less than this are satisfactory with regular-grade gasolines. Tests on representative engines have shown brake-horsepower increases of approximately 30 per cent, with accompanying brake-thermal-efficiency increases in the neighborhood of 20 per cent, when the compression ratio and inlet manifold-temperatures were changed from those suitable for distillate to values correct for 70 octane number, regular gasoline. The increase in brake thermal-efficiency is less than the increase in brake power because reductions in manifold temperature cause no increase in cyclic efficiency, although some increase in overall efficiency does result from the increase in power development, with little or no change in friction loss. Increases in compression ratio, however, do cause increases in cyclic efficiency so that the brake power and efficiency gains resulting from them are substantially equal.



*Test tractors with equipment for testing different fuels to determine the optimum engine conditions for each fuel. The tractor in the rear provides the load for the one in front*

### POWER OUTPUT OF ENGINE

The power output of an engine of a given displacement at a given speed is directly proportional to its brake mean effective pressure. The average B.M.E.P. of current production automobile engines at maximum torque is approximately 100 pounds per square inch. The average B.M.E.P. of current production tractor engines at maximum torque is 74 pounds per square inch. If the B.M.E.P. of tractor engines can be increased to 100 pounds per square inch, merely equaling that of the average modern automobile engines, the average power output of current tractor engines would be increased 35 per cent. This improvement can be obtained by the simple expedient of designing the engines to take advantage of 70 octane number gasoline. Of course, when an engine is designed to utilize 70 octane number gasoline with maximum efficiency, neither kerosene nor distillate can be used.

Most tractors built during the past four or five years have been equipped with heat control valves on the manifold. By changing the setting from the hot (kerosene) to the cold (gasoline) position the operating temperature of the intake riser can be reduced from about 250° F. to about 150° F. By changing the manifold setting from hot to cold and changing the fuel from kerosene or distillate to 70 octane gasoline, the farmer may expect to obtain an increase of about 10 per cent in engine power without any change in compression ratio. By increasing the compression ratio to take full advantage of the antiknock value of 70 octane number gasoline, he can generally obtain an additional power increase great enough to bring the total gain in engine horsepower to about 30 per cent.

Tractor horsepower is usually considered in two classifications, namely, belt horsepower and drawbar horsepower. The belt horsepower of a tractor is usually about 10 per cent less than the brake horsepower of the tractor engine. This dif-

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- Sulfur Dioxide retains its selective solvent action over a wide temperature range. This gives the Edeleanu process unique flexibility. Edeleanu plants are handling anything from gasoline to lubes, with treating temperatures ranging from minus 60 to 150 degrees.
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- The Edeleanu research laboratories are prepared to render the refiner quick and reliable service in investigating his special needs and problems.
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ference is caused by friction losses through the gears that drive the belt pulley. In current production tractors the average drawbar horsepower is 77 per cent of the average belt horsepower. This means that approximately one-third of the brake horsepower developed by the engine is required to move the tractor over the ground. Therefore, only two-thirds of the horsepower developed by the engine is available for work at the drawbar of the tractor. Since friction losses remain practically constant for various loads, it is apparent that any increase in brake horsepower effected in the engine will produce an increase of much greater percentage in drawbar horsepower available for useful work. To illustrate, an increase of 20 per cent in engine horsepower would usually result in an increase of 33⅓ per cent in drawbar horsepower. In other words, a tractor that would develop 24 drawbar horsepower with distillate would develop about 32 drawbar horsepower with gasoline after equipping the engine with the highest useful compression ratio for 70 octane gasoline. This accounts for the ability of a typical high compression tractor to do approximately 33⅓ per cent more work than a similar tractor using distillate or kerosene. This large increase is demonstrated by high-compression tractors pulling four plows against the kerosene or distillate tractor of the same make and model pulling three plows. In many cases two-plow tractors pull three plows with ease.

The engineering departments of most tractor companies would like to see tractor engines designed specifically for 70 octane number gasoline. Should the tractor industry as a whole adopt such a policy the resulting increase in tractor efficiency could be utilized in either one of two ways. The horsepower output could be increased for a given size engine, or the engine size could be reduced for a given power output. By resorting to the first method, the tractor would be capable of doing approximately a third more work with little or no increase in fuel consumption, while by following the second method, the tractor would do the same amount of work on substantially less fuel. The marketing of high-compression tractors built for 70 octane gasoline would materially aid the American farmer in lowering his cost of production.

#### DEMAND INCREASING

At the present time there are two methods by which the farmer can secure high-compression tractors. If, when ordering a new tractor, he will specify on the order that the tractor be equipped with high-compression accessories, the tractor will be delivered from the factory so equipped at no extra cost. When overhauling a tractor or installing new pistons the farmer can convert his old tractor to a high compression ratio by installing high-compression (altitude) pistons which are available from most tractor manufacturers at the same price as regular pistons. High-compression pistons and/or cylinder heads are available for most makes of tractors on the market today.

Consumer demand for high-compression tractors has increased at a rapid rate during the past few years. The result is that today three large tractor manufacturers are marketing tractors in which high-compression engines designed to operate exclusively on 70 octane gasoline are standard equipment. It is expected that two more large manufacturers will do the same in the near future.

For some time now practically all of the tractor manufacturers have been recommending that gasoline be used in preference to distillate even in their regular low-compression engines. The reason for this policy was that the field experience of these companies indicated that the maintenance expense of their engines was considerably less when a good grade of gasoline was used instead of low-grade fuel. Then too, the better performance to be gained by using gasoline proves to be a valuable asset to the farmer.

Because most tractor manufacturers know that the large majority of farmers already use gasoline in their tractors, it is but a logical step for the manufacturers to make high-compression engines standard equipment in all of their models so that the majority of their customers will receive the fullest advantage of the good gasoline which they are already using. For the small minority of farmers that still burn low-grade fuels, the manufacturer will continue to supply low-compression engines as optional equipment.

Today, high-compression engines are now available either as standard, or as optional equipment on at least 14 makes of tractors. To the question "Does the American farmer want high-compression tractors?" the answer is the sales success of the companies that are now marketing high-compression tractors. Some companies think that before long as high as 90 per cent of the tractors produced will leave the factories equipped with high-compression engines.

The tractor industry is moving forward at a rapid pace. Power farming is still in its infancy and the farm tractor is the foundation upon which power farming is built. In the newer models of tractors you see streamlining, self-starters, variable-speed governors, rubber tires, lights, radios, cabs, higher speeds for both field work and road work, and smaller high-compression engines that are more powerful yet more economical than their larger predecessors. In many cases, these new gasoline burning, rubber tired tractors, used in connection with a rubber tired trailer, will take the place of a motor truck.

During the normal life of a tractor the petroleum marketer supplying the owner usually collects more money for fuel, oil, and grease than the farm machinery marketer collects for the tractor itself. Yet to date very little, if any, cooperation has existed between the petroleum industry and the farm machinery industry. Every year the petroleum industry spends many dollars on development work and on sales work in the aviation field which as a market for petroleum products is but a small fraction of the size of the market for petroleum products in the agricultural industry. The entire farm machinery industry is ready, willing, and desirous to cooperate with the petroleum industry in helping to solve many of the problems that are mutual to both groups. In the farm market today the trend is definitely toward the use of better fuels in tractors.

Cooperation between oil companies and farm machinery companies will hasten the attainment of the desirable condition in which the oil marketer can deliver to the farmer one fuel—a good grade of gasoline—which will be used to the best possible advantage, in his automobile, truck and tractor.

# Moist Gulf Coast Soil Presents Many Construction Problems

By GEORGE WEBER

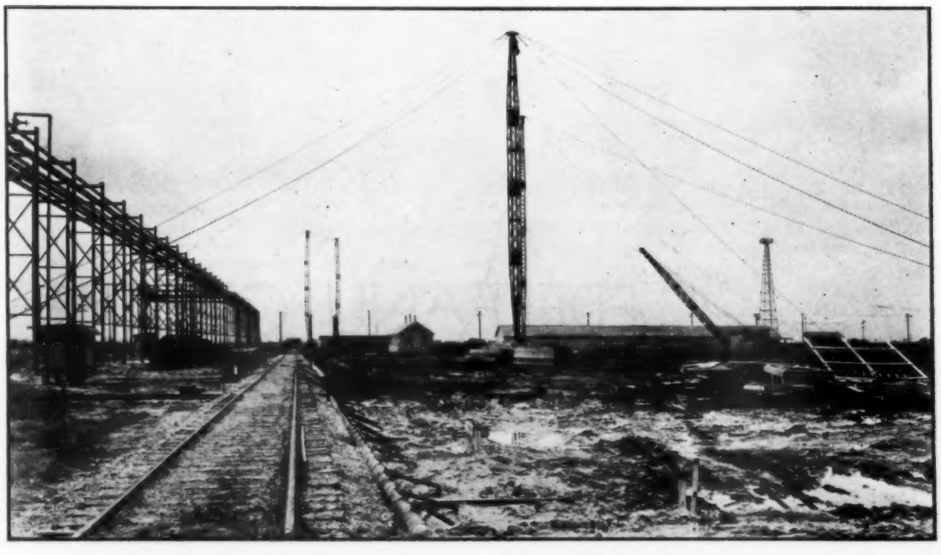
The moist nature of land along the Gulf Coast presents numerous difficulties to the refinery construction engineer. Relative instability of the soil in that area requires specially designed foundations for fractionating columns, furnaces and other refinery equipment, and in the construction of these bases, considerable additional difficulty is encountered from encroachment of ground water. A method devised for combating this condition was found particularly workable at Texas City, Tex., while foundations were being laid for a large combination cracking unit and a polymerization unit at the Pan American Refining Corp. plant.

The refinery site, located near Galveston Bay, has an elevation of only 16 feet above sea level and the water table is maintained at approximately plus 16 feet dependent on the degree of rainfall. In excavating for foundations ground water is encountered at about a depth of 6 feet, and its rapid intrusion would hamper digging and damage concrete forms during the period of setting, unless properly curbed.

A series of headers measuring about 8 inches in diameter are laid on four sides of the plot to be excavated. To the headers, connections are made at 4-foot intervals to conventional type well-points. These vertical lines, screened throughout the bottom 3 feet, extend 20 feet into the ground forming an enclosed rectangle of drainage points at that depth. The ground water is withdrawn through the well headers by pumps.

In the Pan American installations, four pumps were connected at the corners of the header rectangle, two being used continuously and two employed as auxiliaries. By continuous withdrawal of the ground water, the water level within the area was lowered as much as 10 feet allowing excavation down to 16 feet without difficulty. The pumps were operated throughout the period of excavation, pouring and setting of concrete forms.

Sandy soil with streaks of clay was encountered about 6 feet in depth. Porosity of the sand sections which are typical of surface deposits along the Gulf Coast, caused rapid migration of water, and considerable quantities were removed to maintain the level at a safe depth.

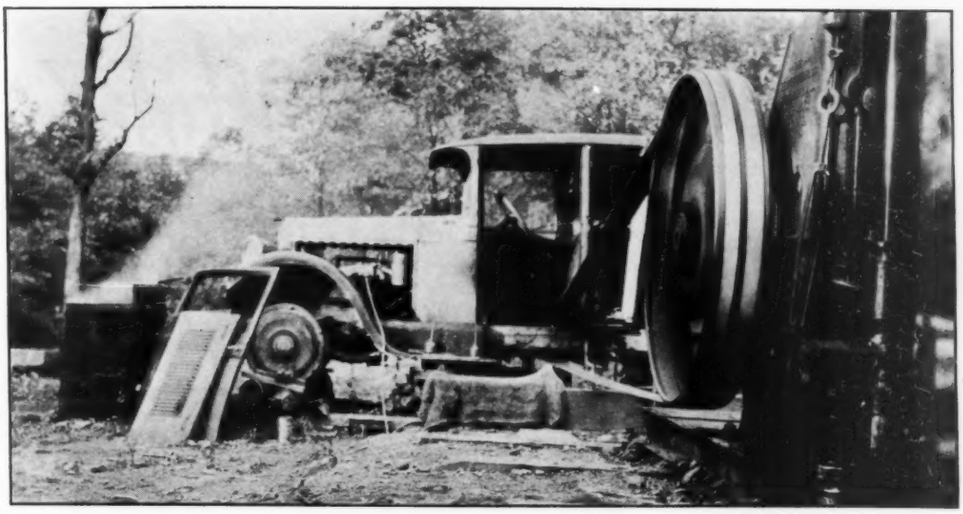


*View of the Pan American refinery site at an early stage of construction. A header with the connected well-points may be seen paralleling the railroad track*

# OPERATING IDEAS

## Brick Platform for Valves

The brick platform shown here keeps leaves and dirt from collecting around the valves, water drains from it readily, and in wet weather it serves to keep the station operator from having to work in the mud. Since the platform is made of bricks, they can be easily torn up and replaced when necessary.

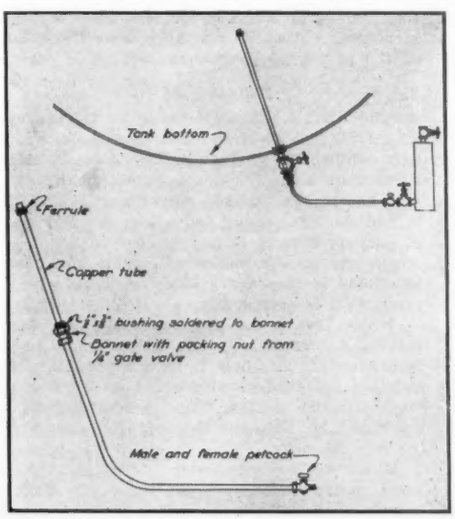


## Old Automobile Engine Pumping Water Well

An operator in western Pennsylvania is using the old automobile shown to pump a water well furnishing water for drilling. The hand-brake drum on the drive shaft is used as the drive pully for the belt. It is sometimes the case that engines no longer of any value for road service can be salvaged and prove to be satisfactory for stationary service.

## Tank Insert Tube

In order to procure clean gasoline samples free of water and sediment from near the bottom of tanks, a device has been made which may be described as a tube inserted through a gate valve. The device is put together as follows: A quarter-inch male and female petcock is soldered on one end of straight copper tubing 3 feet in length. A packing gland is slipped on to the copper tubing, with the packing nut on the end

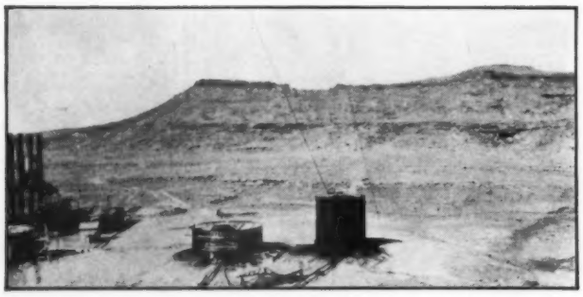



of the tubing nearest the petcock. A copper tubing ferrule is soldered to the tubing near its other end. In sampling, the tubing is pulled through the packing gland to the ferrule, the bushing is screwed into a gate valve on the circumference, near the bottom of the tank. After flushing the tubing by opening the petcock, the test sample is obtained or the vapor pressure determination made. After the tests are made, the petcock is then opened and the tube withdrawn slowly. In doing this an opportunity is given for noting the type of effluent liquid. This device was presented at the 1936 meeting of the Natural Gasoline Association of America by F. L. Fender as an "Operating Kink."

## Pump Installed on Skids to Obtain Flexibility

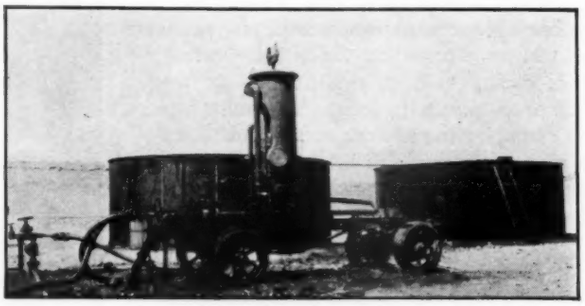
One of the oil operators in the Nowata field of Oklahoma, who is now water-flooding his properties, has installed a river pump so that it may be either raised or lowered as the level of the stream changes. This was done by mounting the pump and motor on wooden skids, the skid traveling on an inclined steel-pipe structure and controlled by a steel cable and small hoist. Thus the pumper is able to raise or lower the pump and suction-line according to the water level of the river. The pump is connected to the suction-line by a rubber hose.

# Operations on Bahrein Island Are Described by Engineer



*View from drilling derrick at site of new well*

By L. G. E. BIGNELL



*Well tester mounted on wagon*

The oil field in Bahrein Island has some similarity to the oil fields of West Texas, according to Dale Nix, assistant resident engineer for the Bahrein Petroleum Co., Ltd., a subsidiary of the California-Texas Oil Co., Ltd., who is spending some time in the Mid-Continent. Mr. Nix was petroleum engineer for the California company in the Yates field, West Texas, before he went to Bahrein Island about three years ago. He is to return to Bahrein Island in December.

In Bahrein Island, he said, the oil is found in a soft sugary limestone very similar to the Brown lime formation of West Texas and southeastern New Mexico which is productive of oil. The formation in Bahrein is encountered at about 2,300 feet below the surface, and on the crest of the structure, a dome-shaped anticline. The thickness of the producing horizon is about 325 feet.

### *DRILLING METHOD*

The wells are drilled using spudders for the first 1,500 feet which is mostly limestone of Eocene age, while the producing lime formation is of Cretaceous age. When the upper portion of the hole has been completed rotary outfits are moved in and the intervening formations down to the top of the producing limestone are drilled. These strata are mostly shales and some shale breaks are found in the sugary limestone from which the production is obtained.

When the top of the producing formation is reached a string of 6⅝-inch casing is set and firmly cemented. The hole is then drilled in with 6-inch bit and 4¾-inch perforated liner set opposite the producing section. This is necessary to keep the crumbling lime and the soft shales from washing into the hole.

These wells usually come in flowing at varying rates under well head pressures of about 475 pounds per square inch. There is little gas with the oil and no hydrogen sulfide. This is the one marked distinction between West Texas and Bahrein crude, according to Mr. Nix who added Bahrein oil did contain an appreciable quantity of sulfur but no difficulty had been experienced in handling it at the 10,000-bbl. refinery erected on the island and completed last July.

Because of the daily demand for this refinery there was not less than six wells drilling at all times during the past winter and early spring. Now that there are enough wells completed to provide as much as 20,000 bbls. of crude daily, if needed, the drilling program has been slowed down and only about three strings of tools will be kept busy the balance of this year and this is probably the rate at which new wells will be drilled during 1937.

Last January several of the older wells were treated with hydrochloric acid and responded nicely. From 500 to 1,000 gallons of acid were used per treatment and many of the more recently drilled wells have also been treated with acid when drilling has been completed. This has helped them some.

As this structure is a distinct anticline with the crest running nearly north and south, or the long axis of the island, it is known that water is to be encountered down the flanks of the structure. Bottom water may also be encountered if the holes are drilled too deep. As this water is the principal energy available for driving the oil into the wells care is taken to prevent drilling into it either down flank or in the bottom of the hole.

One interesting piece of equipment has been devised by the engineering department for use in testing these wells. It is an oil and gas separator mounted upon a truck and the connections provided to take gas and oil from the lease pipe line running from the well to the storage tanks. The accompanying picture shows this well tester at a well where the tank battery happened to be close at hand, but regardless of the distance between well and tanks the wells are tested in the same manner.

At some convenient point on the line leading away from the well connection is made through a section of rotary hose of relatively small diameter with the pipes mounted on the bed of the wagon. In these pipes an oil meter of the Bassler type and a Westcott type gas orifice meter is placed so all gas and oil passing through this tester may be recorded. The oil and gas separator is operated against about 75 pounds pressure and when the gas and oil from the well has been measured it is passed back into the pipe line and delivered into the stock tank. This is a system which prevents the loss of any gas or oil and still permits the wells to be tested at any time.

*Flowing well*

The wells when completed are also interesting as the drilling derrick is removed and a wooden platform built over all well-head connections excepting a short section of pipe extending above the platform. The accompanying picture gives some idea of this form of hook-up. The gate valve shown in the picture with the pressure gauge mounted on the upper end of the flow string is placed there merely to control flow to the top of this string of pipe. If opened, the pressure may be read on the gauge.

If it is desired to run bottom-hole recording instruments the valve is closed and the gauge is removed and in its place a lubricator is screwed to the top of the flow string and the valve then opened to run the instrument. All other well-head connections are below the platform because it has been found this is a very satisfactory means of sheltering them from the heat of the summer sun and from sand storms.

### *LIVING CONDITIONS*

Bahrein Island climate is extremely hot in the summer. The air is humid because of the proximity of the sea. The winters are mild but the total annual precipitation is not more than 3 inches.

Water for domestic and industrial purposes is secured from large fresh water springs and from artesian wells drilled near the coast line. Gas from the oil and gas separators serves as fuel for the homes and offices. Electric light is supplied from a central generating plant. The houses are built with wide covered porches extending around the four sides of the building. This serves as shade and through the center of the house is a wide corridor, usually placed to permit the prevailing north wind to blow through the interior of the house.

The buildings are built with a wooden framework with studs so arranged as to permit the placing of large thin slabs of a peculiar sort of limestone between studs. These limestone slabs are about 2 inches thick and the material is so tough it can be quarried near the coast and transported without difficulty. When in place the joints are filled with a quick-set gypsum of local origin and then the whole outside of the structure is stuccoed with this same quick-set gyp plaster. The houses when completed have a very neat appearance and the more modern ones are being air-conditioned. Older houses are furnished with ceiling fans. Large rooms and high ceilings are characteristic of these homes and they are furnished with furniture imported from the United States and are really comfortable living quarters. The natives live in another section of the central camp.

*(Continued on Page 60)*

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# Practices Employed in Completing West Virginia Gas Wells

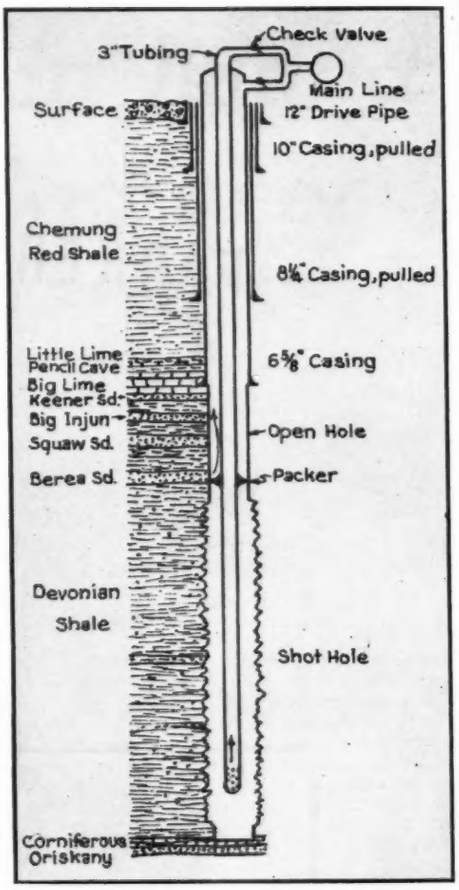
By T. P. SANDERS

It is now common practice in completing gas wells in Boone, Lincoln and adjacent counties in West Virginia and Kentucky to shoot practically the entire thickness of the Devonian shale section with a single shot of gelatin. The shot sometimes is as much as 800 feet long and contains several tons of gelatin. Usually the shots range from 3,500 to 5,500 pounds, but it is reported that at least one well has been shot with 8,000 pounds of 80 per cent gelatin. This would be the equivalent of about 3,000 quarts of nitroglycerin. Although this practice has several objectionable features, such as causing difficult clean-out jobs its popularity is apparently increasing because it increases the production of gas which, strangely enough, occurs in commercial quantities in the shale.

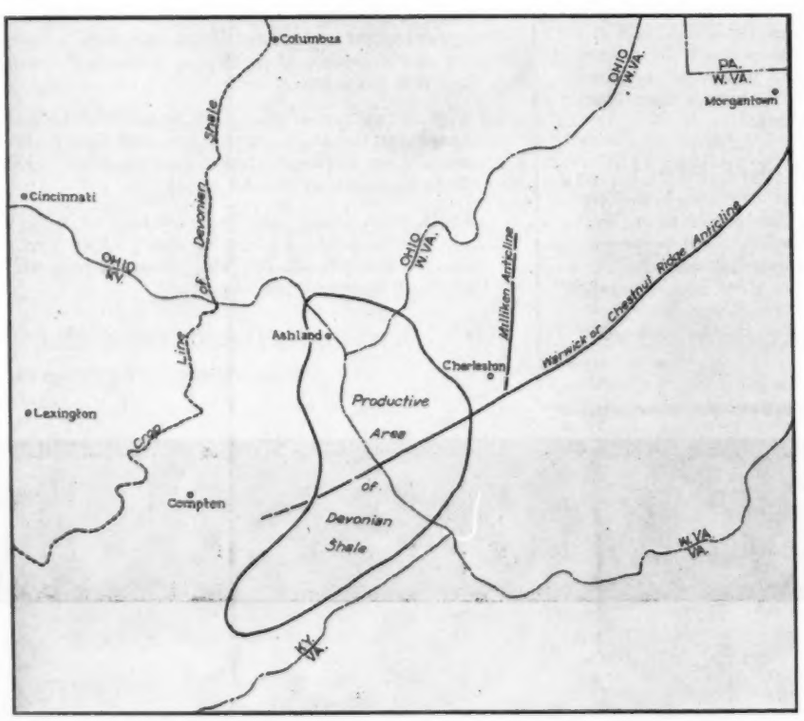
This shale section, productive of gas, and sometimes oil, in western West Virginia and northeastern Kentucky lies below the Berea sand, the basal sand of the Mississippian, and extends downward to the top of the Corniferous (Onondaga) limestone, on which it rests unconformably. The Corniferous limestone is not productive of either oil or gas in the area where the shale is productive, but it is a persistent bed and an important producing horizon in many places, such as the Big Sinking pool in Lea County, Kentucky. The Corniferous limestone lies conformably on the Oriskany sandstone, both being of Devonian age.

In drilling a well in the area in which the Devonian shale is productive it is common practice to set 12½-inch drive pipe through the surface soil, which is as much as 100 feet thick in the river bottoms. Fresh water is seldom found deeper than 300 feet and is shut off by 10-inch casing. About 1,000 feet of 8¼-inch casing is set above what is known as the Third Salt sand to shut off the brackish water in the upper salt sands and to prevent caving of the red rock. The Third Salt sand and the Bradley sand are tested for gas or oil, and if they are found to be unproductive the 6⅝-inch casing is set in the top of the Big lime (Greenbrier limestone) at a depth of about 1,300 feet. The 8¼- and 10-inch strings are then pulled. Water is seldom encountered in appreciable quantity below the Greenbrier limestone, so that the hole is left uncased for a distance of from 2,000 to 3,000 feet. The 6⅝-inch casing is necessary because of the "Pencil Cave" shale which overlies the Greenbrier and caves readily. The casing is also necessary for properly testing the sands of the Pocono series. These are, from top to bottom, the Keener, the Big Injun, the Squaw, the Wier and the Berea sands. The typical well of this area finds 150,000 to 200,000 feet of gas in the Berea sand, which is a persistent bed from 10 to 40 feet thick and a very valuable source of oil and gas in Ohio, Kentucky, West Virginia and Pennsylvania. Drilling is continued through the Devonian shale, the well is bottomed at the top of the Corniferous. Preparations are then made to shoot the shale section.

It may be stated that the average increase in production from the shale resulting from shooting is about 50 per cent. Thus, the typical well producing 300,000 to 750,000 feet of gas per day from the shale before the shot will produce about 1,000,000 feet per day after shooting and cleaning out. Many wells are gauged before the clean-out job, thereby showing little increase. The clean-out job necessitated by the shot is, as would be expected, a difficult one. And regardless of how much time is spent in cleaning out, the walls will still be susceptible to caving. Pockets of gas are formed among the cavings which blow the tools up the hole when encountered. This often kinks the drilling cable, making it necessary to supply a new line, or worse yet, it breaks the line and causes fishing jobs which are especially trying because of the condition of the hole. When a bridge is formed ahead of the bit it is considered best practice to withdraw the tools from the hole and to wait for the gas pressure to build up under the bridge to a point where it is blown out. As far as is known there have been no casualties due to slack line catching men on the derrick floor when tools are blown up the hole. This is because the slack line occurs in the hole and not on the surface as it does when tools are being lowered into the hole and catch on protrusions.




*Generalized section and completion methods for wells in the producing area of the Devonian shale in West Virginia and Kentucky*




*Map showing location of the area in which the Devonian shale produces gas and some oil in commercial quantities*

When the cleaning out has been completed the tubing must be run and the packet set at the base of the Berea sand. This is done because the rock pressure of the Berea is lower than that of the shale section and the line pressure may at times exceed the Berea sand pressure. This would cause repressuring if steps were not taken to prevent it. The annular space between the tubing and open hole is therefore packed off, and the Berea gas is taken out of the annular space while the shale gas passes through the tubing. Check valves are installed on both the tubing connection and the casing connection at the surface to prevent back-flow from the main gathering line. Three-inch tubing is preferred for these wells because its greater weight helps to hold the packer against the gas pressure below it. Also its greater rigidity aids in applying force to the packer in setting it. Gas-anchor or hook-wall packers are used, the latter being preferred. Often it is necessary to install strings of three-quarters inch or 1-inch pipe in these gas well to permit unloading of the water.

*These oil-field engineers are weighing a well with a dynamometer, an important phase of "OILWELL" Sucker Rod Engineering Service.*

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# Enthalpy-Entropy Diagram Is Developed for Methane

By
W. C. EDMISTER
Standard Oil Co. (Indiana)

The Mollier diagram (enthalpy or heat content vs. entropy) for steam has long been a very useful tool of the engineer. From it changes in enthalpy for isothermal, isobaric isentropic (constant entropy) or reversible adiabatic changes in state can be found. It is also possible to determine changes in entropy for isothermal, isobaric, or constant enthalpy (throttling) changes in state. Final temperatures and pressures may also be estimated. In addition the change in the free energy of formation with pressure may be computed.

Thermodynamic properties have recently been calculated for methane.[1] The calculation of these properties was based on the P-V-T data of Keyes and Burks[2], and of Kvalnes and Gaddy[3], and on the isobaric specific heat data at one atmosphere of Eucken and Lude.[4] Equations based on the first and second laws of thermodynamics were used in the development and the calculations were made by means of accurate graphical methods of differentation and integration. Since these calculations have already been discussed[1] in detail, a presentation here would be unnecessary repetition.

The properties resulting from these calculations are here presented in very useful and practical forms, however. Figure 1 is a plot of isobaric specific heats vs. temperature and of the ratio of specific heats, $C_p/C_v$ vs. temperature. Specific heat is dimensionless and may be B.t.u./lb. °F. or g-cal./gm. °C.

Figure 2 is an Enthalpy-Entropy diagram for methane. In the original calculations the reference state for the entropy and enthalpy was 25° C. (77° F.) and one atmosphere and the enthalpy was in calories per gram. With this reference state

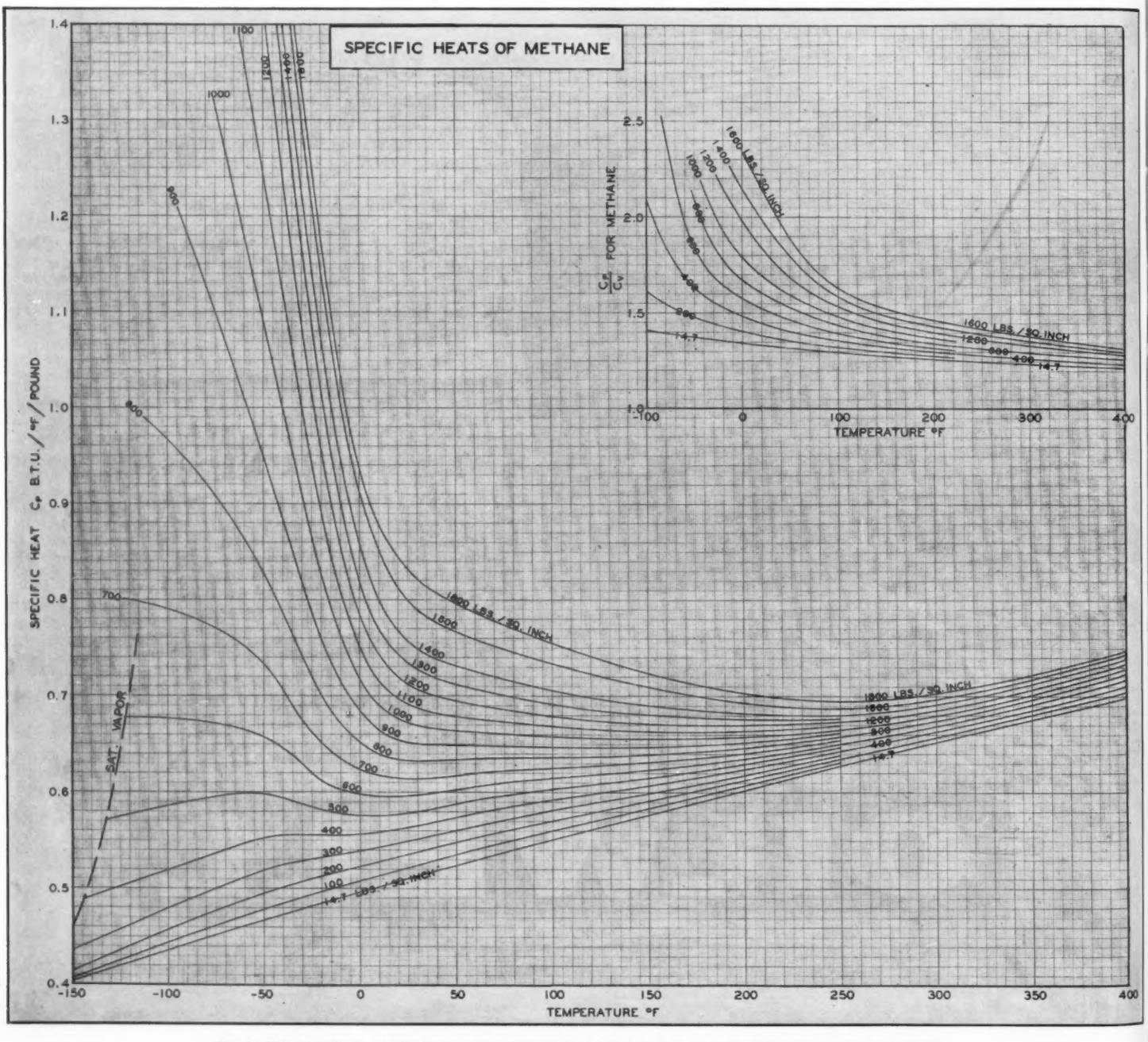


*Fig. 1—Plot of isobaric specific heats versus temperature and plot of ratio of specific heats versus temperature*

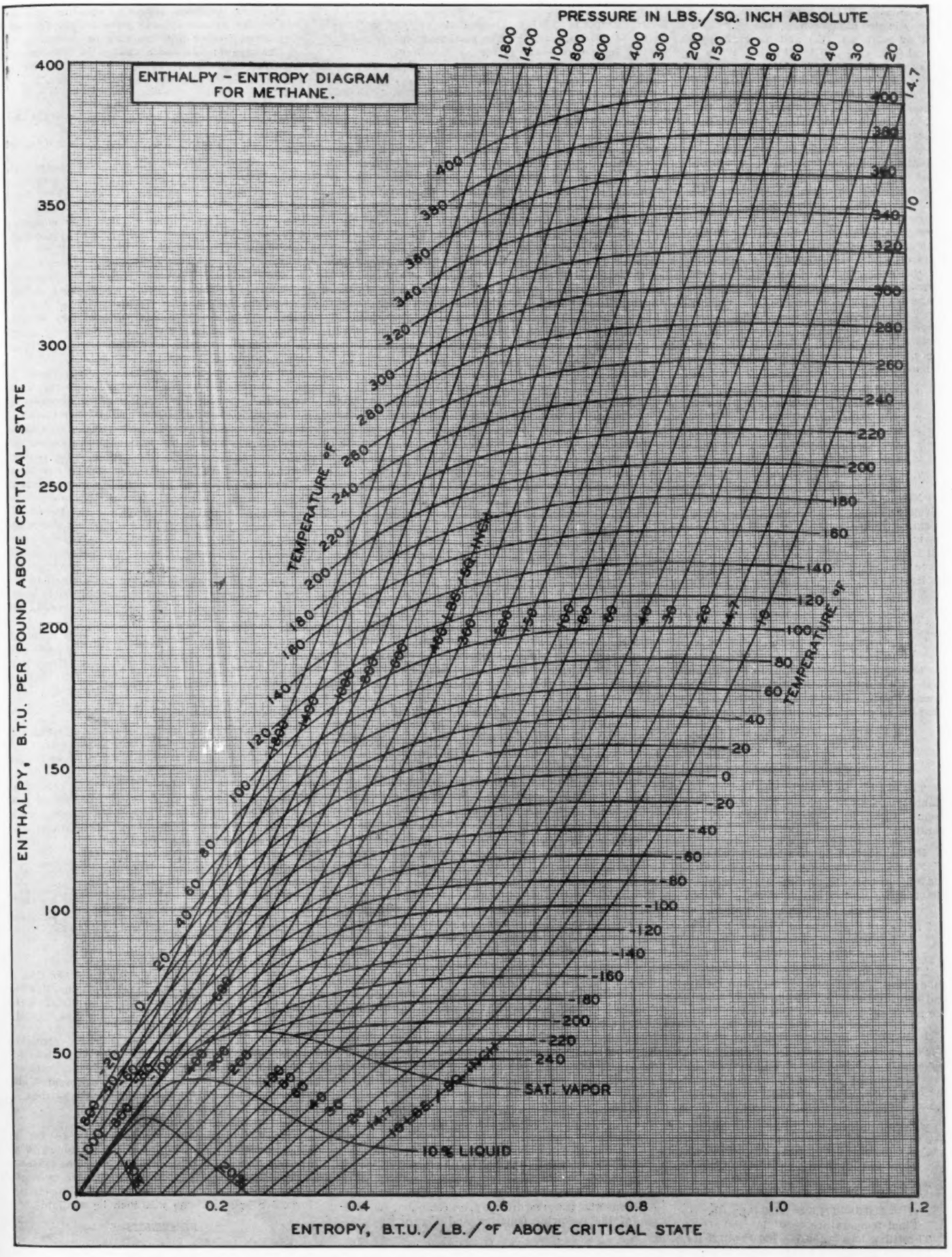


***Fig. 2—Enthalpy-Entropy diagram of methane for calculating problems involving heat, pressure, and free energy changes and other computations***

the entropy at the critical state was —0.911 (entropy is also dimensionless and may be in B.t.u./lb. °F or g-cal./gm. °C.) and the enthalpy was —104 g-cal./gm. or —187.4 B.t.u./lb. When this chart was plotted in English engineering units the reference state was changed to the critical state (—117° F. and 673 pounds per square inch absolute) so there would be no negative entropies or enthalpies.

Among the many uses of the Mollier diagram for steam are: (1) the calculation of the flow velocity from a nozzle, jet, or orifice, (2) the calculation of the work absorbed by a turbine wheel, and (3) the calculation of the loss by throttling or wire-drawing. For the ideal frictionless case the flow through a nozzle, jet, or orifice is adiabatic and reversible at constant entropy. Actually, however, there are friction losses, which cause an increase in entropy and decrease the flow velocity as well as the work absorbed by the turbine wheel, if the jet is directed on a turbine wheel. These friction losses are known as "wire-drawing" or throttling and occur at constant enthalpy.

The Enthalpy-Entropy diagram for methane here presented may be used for these same calculations as well as for the other more obvious ones. The following uses of Figure 2 will be discussed and illustrated:

1. Isobaric (constant pressure) change.
2. Isothermal (constant temperature) change.
3. Loss by throttling.
4. Flow velocity from nozzle, jet, or orifice.
5. Work absorbed by turbine wheel.
6. Change of free energy.
7. Work required in compression.

Note: In computing the work absorbed by a given process by means of the Enthalpy-Entropy diagram it is necessary to assume the process is reversible. Such an ideal process is one in which all friction and other sources of energy dissipation have been removed. Technically any actual process is irreversible.

### ISOBARIC CHANGE

The changes in enthalpy and entropy for a constant pressure process can be found from Figure 2 by following a line of constant pressure.

Example 1: Cool $CH_4$ from 200° F. and 200 pounds per square inch absolute to 0° F. and 200 pounds per square inch absolute and find the changes in enthalpy and entropy.

$$\triangle H = 255.5 - 141.5 = 114 \text{ B.t.u./lb.}$$
$$\triangle S = 0.704 - 0.498 = 0.206 \text{ B.t.u./lb. °F.}$$

### ISOTHERMAL CHANGE

The changes in enthalpy and entropy for a constant temperature process can be found directly from Figure 2 by following a line of constant temperature.

Example 2: Compress $CH_4$ isothermally from 0° F. and 200 pounds per square inch absolute to 1,000 pounds per square inch absolute and find the changes in enthalpy and entropy.

$$\triangle H = 141.5 - 107.5 = 34 \text{ B.t.u./lb.}$$
$$\triangle S = 0.498 - 0.248 = 0.250 \text{ B.t.u./lb. °F.}$$

### THROTTLING LOSS

The loss in throttling or wire-drawing occurs as an increase in entropy at constant enthalpy and can be found from Figure 2 as illustrated in the following example:

Example 3: An engine, a turbine or a nozzle is supplied with methane at 300° F. and 1,000 pounds per square inch absolute and the discharge or exhaust pressure is 100 pounds per square inch. Find the loss if the $CH_4$ is throttled to 600 pounds per square inch before expansion.

No throttling (S = 0.578)

$\triangle H = 306.5 - 140 = 166.5$ B.t.u./lb.
Final temperature = —11° F.

Throttling (Final S = 0.644)

$\triangle H = 306.5 - 171.5 = 135.0$ B.t.u./lb.
Final temperature = 50° F.
Throttling loss = 166.5 — 135.0 = 31.5 B.t.u./lb.
Entropy increase = 0.644 — 0.578 = 0.066 B.t.u./lb. °F.

The loss caused by throttling in the above example is 31.5 B.t.u./lb. and the entropy increase is 0.066 B.t.u./lb. °F. The final temperature is 50° F. instead of —11° F. for no throttling.

### FLOW OF FLUIDS

The following formula for flow through adiabatic orifices, jets, and nozzles can be derived from Bernoulli's theorem

$$\frac{V_2^2 - V_1^2}{2g} = J(H_1 - H_2) \qquad (1)$$

$V_1$ = initial velocity in feet per second
$V_2$ = final velocity in feet per second
$H_1$ = initial enthalpy in B.t.u./lb.
$H_2$ = final enthalpy in B.t.u./lb.
$g$ = 32.174 feet/second²
$J$ = work equivalent of heat = 777.64 foot-lbs./B.t.u.

For flow from a reservoir where the initial velocity is negligible the above equation becomes

$$V_2 = \sqrt{2gJ(H_1 - H_2)} = 223.7\sqrt{H_1 - H_2} \qquad (2)$$

For the ideal frictionless adiabatic case $H_1$ and $H_2$ are at the same entropy and can be readily found from Figure 2 by following a vertical line. For the actual case there will be an increase of entropy and the final temperature will be higher and the final velocity lower than for the frictionless case. If the initial and final temperatures and pressures are known the actual velocity may be accurately found by the above equations. If not the actual velocity may be found from the following equation, which is a modification of equation 2, by assuming a value for "y" the friction loss.

$$V_2 = 223.7\sqrt{(1 - y)(H_1 - H_2)} \qquad (3)$$

y = friction loss and may be approximately 0.10 to 0.20.

Example 4: Find the final velocity for ideal frictionless adiabatic flow of $CH_4$ from 1,000 pounds per square inch absolute and 300° F. to 100 pounds per square inch absolute. Find final temperature.

$V_2 = 223.7\sqrt{306.5 - 140} = 288$ feet/second
$t_2 = -11°$ F.

Example 5: Find the final velocity for the problem in example 4, assuming y = 0.15. Determine final temperature and the loss by throttling.

$V_2 = 223.7\sqrt{(1 - .15)(306.5 - 140)} = 265.5$ feet/second.
$\triangle H = 0.85(306.5 - 140) = 141.5$ B.t.u./lb.
$H_2 = 306.5 - 141.5 = 160$ B.t.u./lb.

From Figure 2 at 1,000 pounds per square inch and H = 160 B.t.u./lb.
$t_2 = 28°$ F.
Throttling loss = 160 — 140 = 20 B.t.u./lb.
Entropy increase = 0.622 — 0.578 = 0.044 B.t.u./lb. °F.

### WORK ABSORBED BY TURBINE WHEEL

The work equivalent of the heat absorbed by a turbine wheel can be found by the following conversion factors:

1 B.t.u. = 777.64 foot-lbs.
1 H.P. = 33,000 foot-lbs./minute.
1 H.P. hour = 2,546 B.t.u.
1 K.W. hour = 3,415 B.t.u.

An example will illustrate:

Example 6: Find the work absorbed by turbine wheel in example 4. Find amount of $CH_4$ required to generate 1 H.P. hour.

$\triangle H = 306.5 - 140.0 = 166.5$ B.t.u./lb.
$W = 777.64 \times 166.5 = 129{,}600$ ft.-lbs./lb. $CH_4$

$$\frac{2{,}546}{166.5} = 15.3 \text{ lbs. } CH_4\text{/H.P. hr.}$$

The change of free energy with pressure at constant temperature may be computed by means of the following equation and Figure 2:

$$\triangle F = \triangle H - T\triangle S \qquad (5)$$

The free energy of formation is usually known at atmospheric pressure. With this equation and the free energy at atmospheric pressure, the free energy at any other pressure may be computed.

Example 7: Calculate change in free energy from one atmosphere and 300° F. to 1,800 pounds per square inch absolute and 300° F.

$\triangle H = 321.0 - 295.5 = 25.5$ B.t.u./lb.
$T\triangle S = (460 + 300)(1.118 - 0.494) = 474$ B.t.u./lb.
$\triangle F = \triangle H - T\triangle S = 25.5 - 474 = -448.5$ B.t.u./lb.

The free energy at 1,800 pounds per square inch absolute and 300° F. is 448.5 B.t.u./lb. greater than the free energy at 14.7 pounds per square inch absolute and 300° F. In other words it would require 448.5 B.t.u. of work to reversibly compress 1 pound of $CH_4$ from 14.7 pounds per square inch to 1,800 pounds per square inch at 300° F.

The free energies of formation of hydrocarbons from carbon and hydrogen are usually presented in calories per carbon atom. This makes a change of units necessary, when Figure 2 is used for calculating free energies, but this is very simple. Since most uses for the Enthalpy-Entropy chart will be in engineering units the chart is therefore presented in those units.

The work required in isentropic compression is equal to the increase in enthalpy, while the work required in reversible isothermal compression is equal to the increase in free energy. For the ideal frictionless case where no jacket water cooling is used the compression is an isentropic process, but for the actual case with no jacket water cooling there is an increase in entropy and in the work of compression. With cooling during compression a lower final temperature results, the entropy decreases, and less work is required. For reversible compression the isothermal case requires the minimum amount of work while the adiabatic case requires the maximum amount. When enough jacket water cooling is supplied to cause a decrease in entropy during compression but not enough to result in isothermal compression, the reversible work required is dependent on the path followed. An example will illustrate.

Example 8: Find the reversible work required to compress 1 pound of $CH_4$ from 14.7 pounds per square inch absolute and 0° F. to 300 pounds per square inch absolute by each of the four following paths:

1. Isentropic to final pressure.
2. Isothermal to final pressure.
3. Isentropic to an intermediate temperature of 200° F. and isothermal to final pressure.
4. Isothermal to final entropy of Case 3 and isentropic to final pressure.

Solution: From Figure 2 the data necessary for the solution of these problems were found and are tabulated in the following table together with the solutions. The details of the solutions are similar to previous examples.

| | | | | | B.t.u./lbs. | | |
|---|---|---|---|---|---|---|---|
| Conditions: | P | T °F. | S | H | ΔH | ΔF | W |
| Initial ..... | 14.7 | 0 | 0.832 | 148 | ... | ..... | ..... |
| Final, Case 1 | 300 | 400 | 0.832 | 388 | —240 | ..... | —240 |
| Final, Case 2 | 300 | 0 | 0.442 | 137 | +11 | —179.5 | —168.5 |
| Inter, Case 3 | 75 | 200 | 0.832 | 258 | —110 | ..... | ..... |
| Final, Case 3 | 300 | 200 | 0.651 | 253 | +5 | —119.5 | —229.5 |
| Inter, Case 4 | 63 | 0 | 0.651 | 147 | +1 | —83.2 | ..... |
| Final, Case 4 | 300 | 200 | 0.651 | 253 | —106 | ..... | —188.2 |

### WORK REQUIRED

Case 1. 240 × 777.64 = 186,800 ft.-lbs./lb. $CH_4$
Case 2. 168.5 × 777.64 = 131,000 ft.-lbs./lb. $CH_4$
Case 3. 229.5 × 777.64 = 178,400 ft.-lbs./lb. $CH_4$
Case 4. 188.2 × 777.64 = 146,500 ft.-lbs./lb. $CH_4$

The work required in Case 1 is the greatest, while Case 2 is the least. The final conditions in Cases 3 and 4 are the same, yet the amounts of work required for compression are different. This shows that the path affects the work absorbed.

### CONCLUSIONS

While the charts here presented are for a single component, which is more often found in a gaseous mixture than in a one-component system, it is believed that they will be of value in engineering calculation. It is hoped that similar charts for other hydrocarbons will soon be available.

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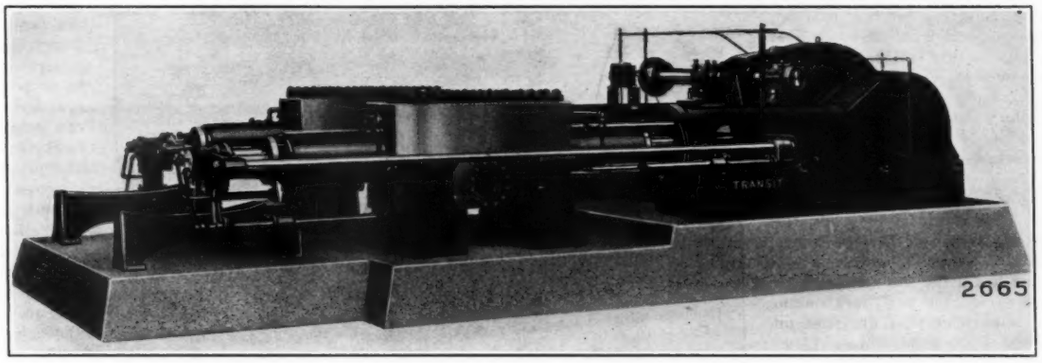


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# Conditioning of Water for Power Production

By RALPH E. DAMP
Carter Oil Co.*

Practically all water used for industrial power production should have some form of treatment. An abundant supply, usually from a stream, lake, or well, is the first prerequisite. Such water generally contains destructive impurities which are not considered seriously until the industrial use has developed a great deal of trouble and expense in producing an inferior product, poor operating efficiency, or high maintenance and repair cost. Particularly is this true in those sections of the country where oil or gas is produced, because such regions usually are highly impregnated with minerals which contaminate the ground or surface waters.

The industrial problem is fast becoming one of obtaining higher efficiencies throughout, and naturally power being the prime mover must be carefully analyzed. Thus, it is essential to study the constituents of the feed water used in power generation as water conditioning pays big dividends.

We are all familiar with the conventional or typical water analysis; calcium and magnesium are the two principal impurities that are first on the list as "public enemies" to good water. However, there are others that must be considered as well, in order to solve the "crime" that may be taking place in your plant. Calcium and magnesium are the chief causes of incrusting solids commonly referred to as scale. Other substances also found as common impurities in water are: Silica, iron, sodium salts, and many suspended organic materials.

Now having agreed that most natural water contains impurities that must be removed or conditioned before a satisfactory water can be obtained for industrial purposes, the type of treating plants, its functions, limitations, fixed and operating charges must be considered.

### TYPES OF WATER TREATING

There are two general types of water treating plants: Namely, lime and soda-ash (cold and hot process) and zeolite. The method most effective will be discussed first, lime and soda.

The choice of a softener system can be determined only by conditions peculiar to the user. The cost of installation, cost per 1,000 gallons of water treated, economy of space, simplicity of operation, must be weighed against the refined quality of water furnished and the ability of the plant to operate under fluctuating loads.

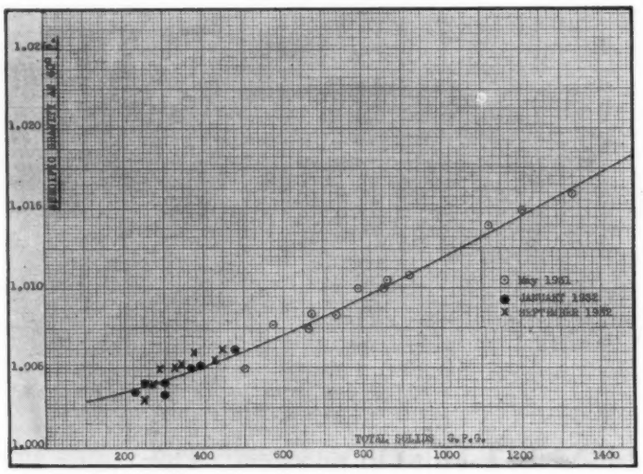
The lime-soda softening system (cold) with or without return sludge and recarbonation, is probably the most widely used and is unique in its installation and operation and unbelievable in results obtained in the final water. By the addition of lime (Ca0) nearly all of the carbonate or temporary hardness can be precipitated from a water, and the magnesium salts changed to calcium salts. The permanent hardness can be completely removed by the use of soda-ash. The amount of calcium and magnesium that can be removed economically, depends upon the concentrations of certain other salts present, the design of the system, and the excesses of lime and soda-ash that can reasonably be carried. The efficiency of the process can be increased by the addition of an accelerator, sodium aluminate, or by increasing the temperature, which results in a softer water, in a shorter time-period, and the utilization of smaller equipment. Thus the hot process is particularly desirable in steam plants because the water must be heated in any event. However, if the water is to be used for cooling purposes, one should remain with the cold process.

Intermittent and continuous lime-soda softening plants have their respective places. With the intermittent process, the advantages are: In the accurate regulation of chemicals to the water, and the ease which adjustment can be made to provide uniform quality even though the character of the raw water varies widely. The capacity of the plant can be increased should greater volume be required with minimum expense and also without disturbing the initial plant and its efficiency. The chief disadvantage is the larger space necessary and greater first installation cost. The continuous process has the advantage of a much smaller space and unit to satisfactorily soften a given capacity, thus, a lower first cost. It is simple and automatic in operation and requires a minimum amount of attention. The principal disadvantage is in adjusting chemicals if the raw water varies widely in composition in order to insure a uniform quality in the treated water.

The zeolite softener utilizes a complex base exchange silicate, which has the property of taking up calcium and magnesium ions and giving off an equivalent amount of sodium ions for a definite capacity. When this action ceases the zeolite can be regenerated by washing with a relative small volume of strong sodium chloride solution. The process can be repeated indefinitely without loss of the zeolite mineral, except through attrition. There are both natural refined zeolites and manufactured zeolites, the manufactured having a much higher capacity per unit volume. This type of softening has the advantages usually of lower first cost, requires little skilled attention, and will handle a water varying in composition. Usually the chemical softening cost is lower per 1,000 gallons if the raw water contains principally permanent hardness.

Lime-soda softening has a decided advantage over zeolite in that the total dissolved solids are materially reduced. This type is of prime importance if the water is used for steam generation. Also zeolite may follow partial lime treatment, if the water is particularly hard to secure a better resultant water and lower treating cost.

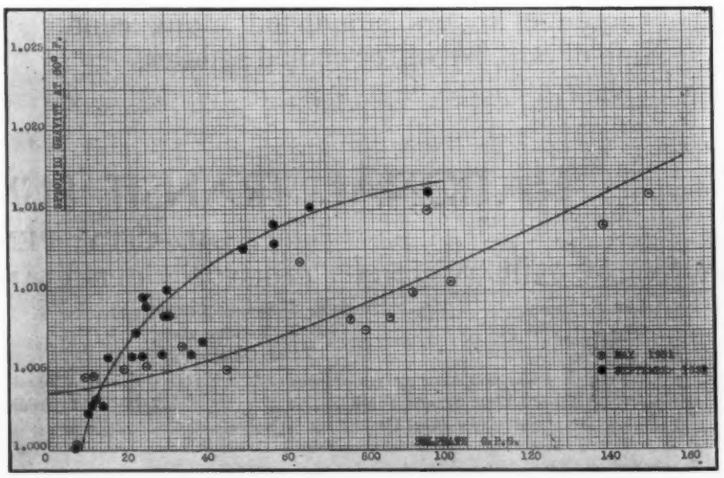
The conditioning of water for internal combustion engines, coolers, condensers, and etc., is appreciably different than that for steam generation. Such water should be as low in calcium and magnesium incrusting solids as can economically be obtained in the average plant. A small amount of scale is desirable to lessen corrosion rate and the formation of "rust barnacles." The silica content is important, and the water should contain even caustic alkalinity to keep the silicates in solution as the concentrations increase. Suspended solids should be low, especially organic matter. We find by analysis that the scale formed from cooling water usually predominates in carbonates, which is the temporary hardness from the raw water, and precipitates out when the temperature increases to 200° F. Carbonate scales are porous and soft, but act as insulation to the transfer of heat. Sulfate scales usually are not precipitated until the temperature is raised considerably above the boiling point or until the sulfate concentrates beyond its solubility.




*Plot of specific gravity versus total solids on boiler water taken at the Dunn plant of Carter Oil Co.*

### CONTROL OF ALGAE

Algae, commonly called green moss, adds a perfect binder for the accumulation of oil films, silica and carbonates. Such accumulations start hot spots which eventually builds up a scale that is hard to remove and a perfect insulator. Algae can be easily controlled by the application of copper sulfate in quantities up to 5 parts per million.




*Specific gravity versus sulfate, in grams per gallon, for boiler water used at the Dunn gasoline plant*

*Presented before annual meeting of the Southwest section of the American Water Works Association, Fort Smith, Ark., October 12-15.

Chlorine in quantities of 5 to 10 parts per million is very satisfactory for algae control, and can be used in conjunction with copper sulfate in obstinate cases.

The presence of a free acid accelerates corrosion. If an organic acid may be formed in the decomposition of organic matter, it is essential that such be removed by chemical precipitation and filtration. Some natural water containing only mineral impurities have an acid reaction, or hydrogen-ion concentration which places it on the acid side, even though it has methyl orange alkalinity. It is particularly desirable to increase the PH value by increasing the hydroxal ion concentration as this reduces the corrosion rate. It is impractical to exclude oxygen and carbon dioxide from jacket and condenser water. Thus in the conditioning of water for these purposes, it is necessary to reduce the bicarbonate or temporary hardness, so that carbonates will not be precipitated out as scale, with the resultant carbon dioxide, which in the presence of oxygen, rapidly increases the corrosion rates.

Chlorides always enter into the corrosion problem and as yet there is no practical and economical method for their removal. Thus, in a satisfactory lime and soda softened and filtered raw water that is to be used in jacket and condenser cooling, there remains oxygen, chlorides, and silica which still must be conditioned or controlled to prevent severe corrosion. Usually silica can be kept in solution if the hydroxal ion concentration is high enough in the presence of excess sodium. It may become necessary to add chemicals known as passifiers in order to retard the action of chlorides, oxygen, carbon dioxide, etc. Phosphates, chromates, nitrates, acetates, tannates, etc., are effective. For jacket and condenser water, the use of chromate is considered the most practical and satisfactory, and should be carried in concentrations of at least 500 parts per million. The cost of such treatment is very low as there is no loss of the chromate except through dilution by make up for windage loss, etc.

Total solid concentration varies widely in various waters used for cooling purposes. Loss of water by evaporation naturally increases the total dissolved solids, but loss by windage when passed through spray ponds and cooling towers tend to keep the solids from concentrating excessively. The best check is to periodically inspect lines, jackets, and condensers for scale deposition, corrosion, etc., and control the total solids according to such findings. Also the softening treatment can be regulated by the above inspections.

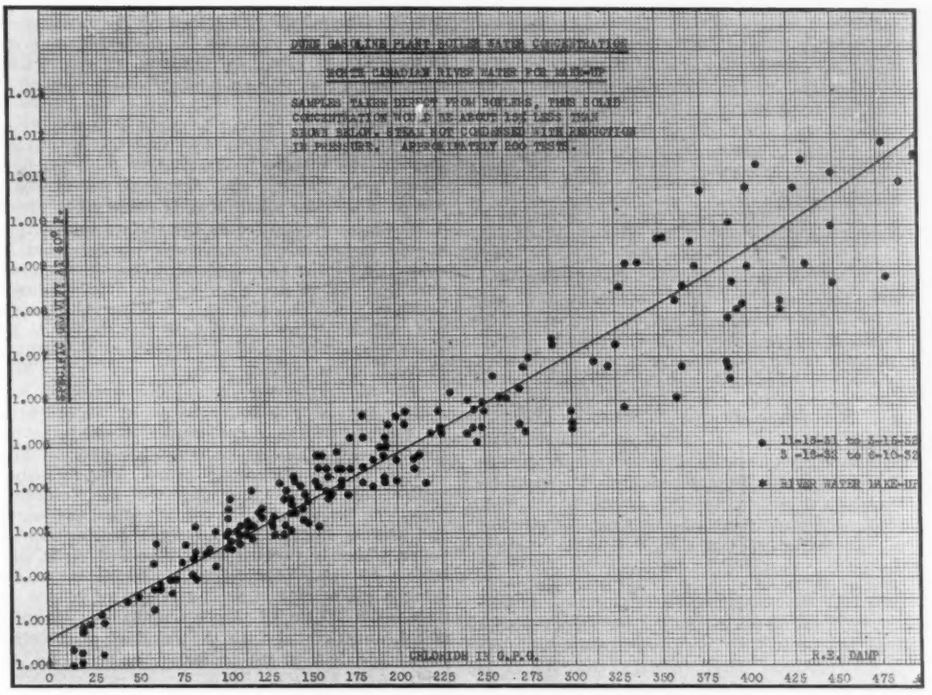
### *CLOSED COOLING SYSTEMS*

The installation of closed cooling systems have been found very efficient and practical to prevent corrosion in water lines for engine jackets and condensers. There is very little loss from the system and the water is of know condition.

The following analyses (Table 1) are presented as typical from river and well waters. Treatment by lime-soda and zeolite is also shown.

The chemical cost of treatment for the well water would be approximately 3 cents by lime-soda and 4.45 cents by zeolite per thousand gallons. For the river water 9.5 cents by lime-soda and 8 cents by zeolite per thousand gallons. The delivered cost of chemicals in different areas will change the above figures slightly.

The treatment of water for steam generation is an absolute necessity in the present-day boiler plant for efficient operation. The modern steam generating plant carries higher steam temperatures and pressures which require a much purer feed water than was formerly thought necessary, say 10 years ago. Feed water for boiler operation under moderate pressure should be conditioned so that it is entirely free of permanent hardness (sulfates and calcium magnesium) and the carbonate hardness should not exceed 35 parts per million. Turbidity should be less than 2 parts per million. It should contain not more than a trace of oil and be practically free from oxygen. The sulfate content should be such that the ratio of sodium sulfate to sodium carbonate is not lower than the following:


DUNN GASOLINE PLANT BOILER WATER CONCENTRATION
SOURCE CANADIAN RIVER WATER FOR MAKE-UP
SAMPLES TAKEN DIRECT FROM BOILERS, THIS SOLID CONCENTRATION WOULD BE ABOUT 15% LESS THAN SHOWN BELOW, STEAM NOT CONDENSED AFTER REDUCTION IN PRESSURES. APPROXIMATELY 200 TESTS.
SPECIFIC GRAVITY AT 60° F.
CHLORIDE IN G.P.G.
F.S. DAMP
11-13-31 to 2-15-32
3-18-32 to 6-10-32
RIVER WATER MAKE-UP

*Concentration of boiler water samples taken at the Dunn gasoline plant*

**BOILERS OPERATING BETWEEN**

| | |
|---|---|
| 0-50 lbs. gauge | 1 to 1 |
| 150-250 lbs. gauge | 2 to 1 |
| 250 lbs. and over | 3 to 1 |

If the sulfate content is not sufficient to give such ratio under the operating condition, then it is necessary to add an inhibitor to safeguard against embrittlement (See later determination of NAOH and $NA_2$ $CO_3$.). If the above requirements are followed the feed water will not produce an adherent scale, corrosion will be reduced to minimum, and there will be no danger of embrittlement. Feed water for boilers operating at extremely high pressures (400-1,000 pounds) should have all the hardness removed.

It is understood that an adequate blowdown schedule must be maintained even when the above requirements are followed.

If the feed water has been softened by the lime-soda, cold process, there will necessarily remain an excess of caustic soda and soda-ash of upward to 50 parts per million, in order to remove all permanent hardness, and will result in caustic alkalinity (NaOH). In order that the reactions be hastened to completion, the addition of sodium aluminate is preferred as it does not increase the permanent hardness. Aluminum sulfate may be used satisfactorily if the reaction time is sufficient for complete crystallization and also is desirable if the natural sulfate content is low. The excesses of chemicals necessary in this process may result in trouble by foaming and priming within the boilers if the concentrations are carried too high. This condition can be corrected by blowdown.

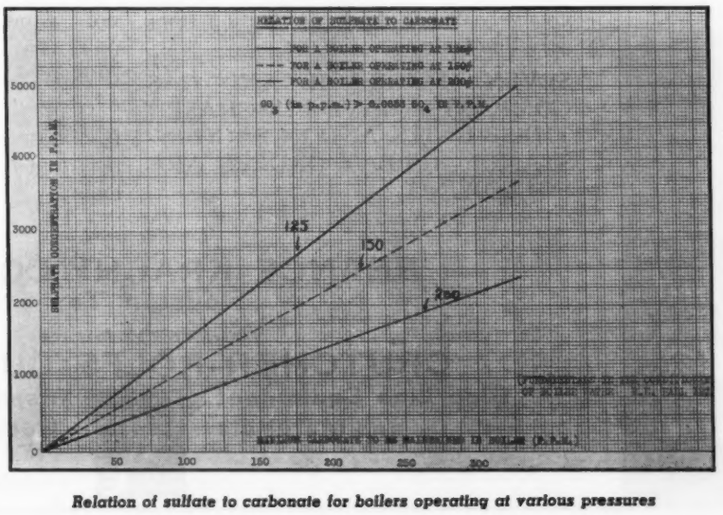
All turbidity or suspended solids should be removed as completely as possible, no matter what type of softening is used. Such material not only increases the total solid content, but by being suspended throughout the boiler aggravate and increase the tendency to foam and prime.

The lime-soda, hot process, is essentially the same as the cold process, but has the advantage of heat (as the name implies), which results in a better quality feed water. Chemical reactions are more complete and obtained in a much shorter time, less chemicals are required, and the final treated water is near the boiling point as it enters the boilers. Lower alkalinities are obtained with less excess of chemicals, which reduce the tendencies to foam and prime, and it is easier to maintain sulfate-carbonate ratios.

The zeolite process has the advantage of almost complete hardness removal with no excess chemicals. The serious objection is that the temporary hardness is converted to the sodium salt, which decomposes in the boiler into sodium hy-

**TABLE 1—ANALYSIS OF TYPICAL WATERS**[1]

| Source—Well | Grs./gal. raw water | Grs./gal. lime-soda | Grs./gal zeolite |
|---|---|---|---|
| Total hardness | 17.8 | 3.0 | 0.5 |
| Total alkalinity | 22 2 | 8.2 | 22.2 |
| Total dissolved solids | 28.5 | 13 5 | 29.0 |
| Calcium carbonate | 11.7 | 3.0 | 0.5 |
| Magnesium carbonate | 5.2 | ... | ... |
| Sodium carbonate | 4.6 | 4.6 | 22.2 |
| Sodium chloride | 5.0 | 5 0 | 5.0 |
| Sodium hydroxide | ... | 0.6 | ... |
| Suspended solids | 2.4 | ... | 2.4 |
| Free carbon dioxide | 1.0 | ... | 1.0 |
| **Source—River** | **Grs./gal. raw water** | **Grs./gal. lime-soda** | **Grs./gal. zeolite** |
| Total hardness | 32.5 | 3.0 | 0 5 |
| Total alkalinity | 16.1 | 5.0 | 16.1 |
| Total dissolved solids | 54.9 | 45.0 | 56.2 |
| Calcium carbonate | 16.1 | 3.0 | .5 |
| Sodium carbonate | ... | 1.0 | 17.1 |
| Magnesium sulfate | 12.0 | ... | ... |
| Calcium sulfate | 8.5 | ... | ... |
| Sodium sulfate | 12 9 | 35.8 | 35.8 |
| Sodium chloride | 4.3 | 4.3 | 4.3 |
| Sodium hydroxide | ... | 1 0 | ... |
| Free $CO_2$ | 1.2 | ... | 1.2 |
| Suspended solids | 84.6 | ... | ... |


RELATION OF SULPHATE TO CARBONATE
FOR A BOILER OPERATING AT 125#
FOR A BOILER OPERATING AT 150#
FOR A BOILER OPERATING AT 250#
$SO_4$ (in p.p.m.) > 0.0685 $SO_4$ IN P.P.M.
RELATIVE CONCENTRATION IN P.P.M.
125
150
250
SULPHATE TO BE MAINTAINED IN BOILER (P.P.M.)

*Relation of sulfate to carbonate for boilers operating at various pressures*

droxide and carbon dioxide. The caustic increases the tendency toward embrittlement, and the carbon dioxide accelerates corrosion unless removed by preheating before going into the boiler. Also there is no removal of turbidity or oil.

Lime-zeolite softening is desirable where the water is high in temporary hardness, and has the advantages of both processes, but requires a more elaborate plant.

Within the boiler, operating under some predetermined pressure, steam is being liberated from the surface of the superheated water. Steam is pure water vapor (with limitations of gases liberated) and is first produced at the intimate contact of water with the boiler metal. It passes up through the liquid and erupts from the surface as a gas, thus, the boiler water is in constant movement and agitation, and is being concentrated rapidly, as the pure water leaves, the dissolved solids remain behind.

The gases liberated, the decomposition of organic matter, and presence of chlorides and nitrates, and especially magnesium, bring about acid reactions which must be corrected to prevent corrosion. Thus it is absolutely essential that these be removed to a minimum before the water enters the boiler, to reduce corrosion rate. It may be necessary to install a mechanical or apply chemical deareators to remove oxygen from the feed water. In operating practice, it is found that by the maintenance of a PH of at least 9.5 and an oxygen content of less than 0.01 milliliter per liter, the corrosion rate is greatly retarded.

Embrittlement of boiler plate is without question the most dangerous condition that can occur in a boiler. Operation without chemical knowledge may, and has resulted in most disastrous boiler plant explosions. The term is not to be confused with corrosion and fatigue failures. Embrittlement cracks start on the dry side of the plate; are irregular in direction; never extend beyond the seam; occur in plates that have perfect physical properties and composition. It occurs in only boilers operating with a highly caustic water, low in sulfate. Control is maintained by the addition of sulfuric acid or inhibitors, in the event that the sulfate radical is not sufficient in the feed water. The use of sulfuric acid is extremely hazardous and should not be attempted without the advice of a competent chemist and frequent analyses. Phosphates, chromates, tannates, nitrates, arsenates, and acetates may be used as inhibitors. Phosphate added preferably as the monohydrogen phospate (to maintain low alkalinity) is found to be about 1,500 times as effective as the sulfate radical[2]. It should be carried in appreciable excess, about 20 parts per million as phosphate radical in low pressure boilers; 40 parts per million at 250 pounds pressure, when the alkalinity is below 1,300 parts per million; if above, increase the phosphate 20 parts per million for each 400 parts per million increase in alkalinity[2].

The determination of sodium carbonate and sodium hydroxide in boiler waters by the ordinary method of titration is not correct. Usually the results indicate high carbonate and low hydrate, this in turn indicates incorrect ratios. The following method of analysis is suggested by Frederick Straub[2] in determining the actual sodium carbonate and sodium hydroxide: 100 cubic centimeters of boiler water is titrated with standard N/50 sulfuric acid using phenolphthalein as an indicator, using A c.c. of acid. A second sample of 100 c.c. is then taken, 20 c.c. of 10 per cent barium chloride added, and titrated with the standard acid, using phenolphthalein as an indicator, using B c.c. of acid.

B × 8 equals sodium hydroxide in p.p.m.
2 (A—B) × 10.6 equals sodium carbonate in p.p.m.

At this point, the total solid concentration in the boiler water is pertinent. As the solids increase in concentration chemical reactions change, that is, their behavior is such that additional control and treatment may be necessary. For example, sodium sulfate is known to precipitate out under excess concentrations and form a soft thick scale under certain definite operating conditions. When the boiler is shut down for inspection and washing, there is no sign of scale remaining. Such salts have decreasing solubilities with increasing temperatures and pressures above certain concentrations.

The limitation of total solids is controlled through blowdown, either intermittent or continuous. Intermittent blowdown is the usual practice and is set up for a definite period of time at regular intervals. Concentrations are reduced by such operations and can be maintained within well defined limits. Continuous blowdown, from just under the surface of the boiler water, is considered much better operating technique. Concentrations of boiler water are slightly higher at the surface where pure steam is leaving the solution.

Foaming and priming are very closely related. However, they are distinguished from each other in that foaming is considered that condition when bubbles accumulate on the surface of the boiler water in sufficient quantity to fill the steam space, and, then are carried off continuously in the line along with the steam. Concentration of sodium salts and suspended solids or organic matter increase the tendency to foam. Priming may be considered as the periodic carry-over of appreciable quantities of boiler water in a more or less explosive manner. It is usually caused by careless operation in carrying the water level too high for irregular steam demands, and irregular firing, which causes the water to surge, or too high a concentration of dissolved and suspended solids. Generally effective blowdown, along with properly conditioned feed water, will eliminate these conditions. The use of antifoam compounds are sometimes resorted to and may yield results under certain conditions. However, if the above precautions are heeded, there is little need for trouble from foaming and priming.

***REFERENCES***

[1] "Water Supply and Treating Methods for Modern Oil Field," by W. K. Whiteford. Presented at A.P.I. annual meeting, Chicago, 1930.
[2] "Embrittlement in Boilers," by Frederick G. Straub, University of Illinois (Bulletin 216).

# CATHODIC PROTECTION

*by*

## WIND DRIVEN GENERATING UNITS

After installing some fifty wind generators for generating direct current for the protection of underground pipe lines against corrosion, we have proved conclusively that Cathodic Protection stops pipe line leaks.

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# Record String of Pipe Recovered From Gulf Coast Deep Wildcat

By NEIL WILLIAMS

A record of deep fishing jobs was recently set by Continental Oil Co. in its No. 1 O'Hebert, a wildcat test on the Abbeyville Prospect in Vermilion Parish, Coastal Louisiana. In this test a string of 3-inch internal flush-joint drill pipe stuck while a core was being taken at a total depth of 11,732 feet. The hole, however, was cleaned successfully to 10,907 feet, leaving only 825 feet to bottom.

Recovery of additional pipe was prevented when wash pipe, with which the hole was being washed down, stuck over the fish. The drill pipe on which it was being run was backed off at the safety joint, leaving the wash pipe in the hole. The latter was stuck so tight that three days of jarring and trying to back it off failed to free it, so it was decided to sidetrack it.

To sidetrack, the old hole was cemented back to the top of the fish, which was 40 feet up in the 7-inch casing, the bottom of which is at 10,947 feet. The casing was then milled out, and new hole is being drilled from that point. The hazard of a soft, cavey formation in the open hole below the bottom of the 7-inch casing, in which heavy gas pressures were encountered and which gave operators considerable trouble in drilling, also made it advisable to drill a new hole rather than to attempt further to clean the old hole.

*Three-inch internal flush drill pipe fished from the deep wildcat and stacked in the derrick*

This test is the second deepest in the world, its old depth of 11,732 feet being exceeded only by Gulf Oil Corp.'s No. 103 McElroy, a test in Upton County, West Texas, which was drilled to 12,786 feet, where it was abandoned. As the latter had no fishing jobs at those levels, the Abbeyville stuck drill pipe was the deepest fishing job in the world.

Except for the pipe above 3,300 feet, which was backed off readily by the operators themselves when the string became stuck, the fishing operations were under the direct supervision of Houston Engineers, Inc., of Houston. The 7,607 feet of pipe from the top of the fish at 3,300 feet to 10,907 feet, the depth to which the hole was cleaned, was recovered within a period of nine days.

Involved in this job were 25 round trips, of which two were made with wash pipe to wash down and 23 with fishing tools to recover pipe. Of the latter trips, 12 were successful in coming out with pipe backed off from the fish. The unsuccessful runs were attributed entirely to the handicaps and difficult conditions under which the work was being carried on. The "water hauls" and other unsuccessful runs failed to discourage the operators, who kept at the job.

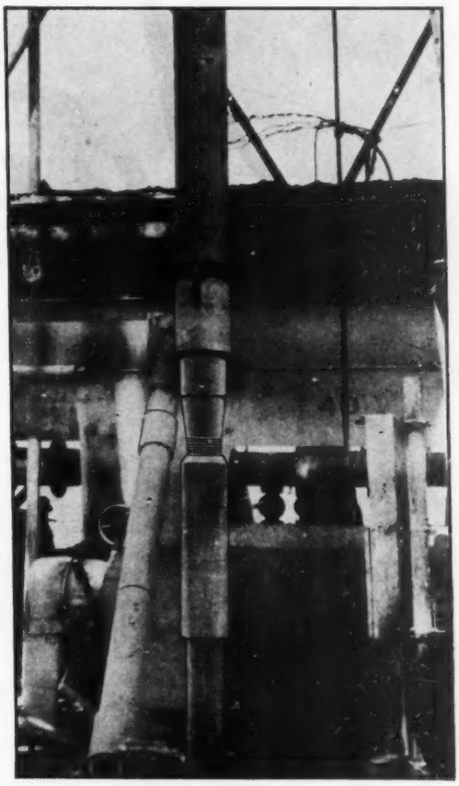
### *RECOVERY OF DRILL PIPE*

Round trips at the shallower depths required only from an hour and a half to two hours, but by the time the fishing had progressed to depths below 10,000 feet eight hours was considered good time. The time for round trips at the last slowed up the fishing work. The above number of round trips and the nine days required for recovery of the pipe do not include the trips and time after the last section of pipe was brought up. Eight additional days were taken and six round trips made in unsuccessful attempts to recover additional pipe and to free the stuck wash pipe before it was decided to plug back and sidetrack.

The recovery per trip ranged from as little as one joint of pipe to 14 joints, with the exception of one backoff of 118 joints which was made at 7,640 feet. The latter, totaling 3,658 feet, is the longest drill-pipe fish on record that has been brought out in one run. Only in one other instance, so far as known, has a longer fish been taken at one trip and that was 2-inch tubing, with a section of 4,018 feet.

High pressures encountered below 10,000 feet occasioned by the weight of the mud column and the heavy gas pressures from the open hole below the bottom of the 7-inch casing contributed to the problems of the job. These pressures made it difficult to maintain necessary lubrication in the fishing tools.

In the work three patented 5¾-inch O.D. reversing tools were used. These tools were run on the pipe which was fished out of the well. As additional pipe was recovered, this was added to the fishing string to permit continuation of the fishing. None of the pipe recovered with the reversing tool, a special tool manufactured and operated by Houston Engineers, Inc., was damaged in any way, which was an important saving to the company in view of the cost of such pipe (3-inch internal flush joint).



*Reversing tool coming out of the hole with backed-up drill pipe in Continental Oil Co.'s deep wildcat at Abbeyville*

In addition to the reversing tools, which were run on 18 trips, right-hand overshot tools were run five times. When the wash pipe was stuck at the last, jars were run, and when this tool failed to loosen the wash pipe a reversing tool with an overshot was run as a final attempt, but this also failed and further fishing was abandoned.

The well is being drilled for Continental Oil Co. under contract by Loffland Brothers. W. H. Brown, toolpusher for Loffland Brothers, has been directly in charge of the work, with Grover Simpson and "Dude" Camden, also of Loffland Brothers, also on the job. J. E. Brotherton, engineer for Houston Engineers, Inc., has been directly in charge of the fishing job. Fred Waltermire is general superintendent for Continental Oil Co.

In the hole is the longest string of 7-inch casing ever run, this consisting of 8,947 feet of regular, 30-pound, Grade D casing and 2,000 feet of 28-pound external upset, seamless steel pipe, a total weight of approximately 325,000 pounds. It was run in without trouble (see The Oil and Gas Journal, July 23, 1936) and cemented with 2,000 sacks of cement.

Just below this casing a thin, hard formation was drilled, underlying which was the section of soft, mushy shale which gave so much trouble. Encountering heavy gas pressures the well tried to blow out, sticking the pipe, but this was brought under control and the pipe freed to permit further drilling. It is believed that this is the formation which caused the present trouble. The hole was drilled once from the bottom of the casing to a total depth of 11,505 feet, where it was found the hole had drifted 6 degrees off vertical. It was then plugged to the casing and redrilled to the depth of 11,732 feet.

Following is a schedule of the fishing operations on the well:

#### *First Day*

1. Ran reversing tool with left-hand taper tap as grapple, backed off and came out with two-joint fish; broke or backed off easily.

*(Continued on Page 60)*

# *Announcing*

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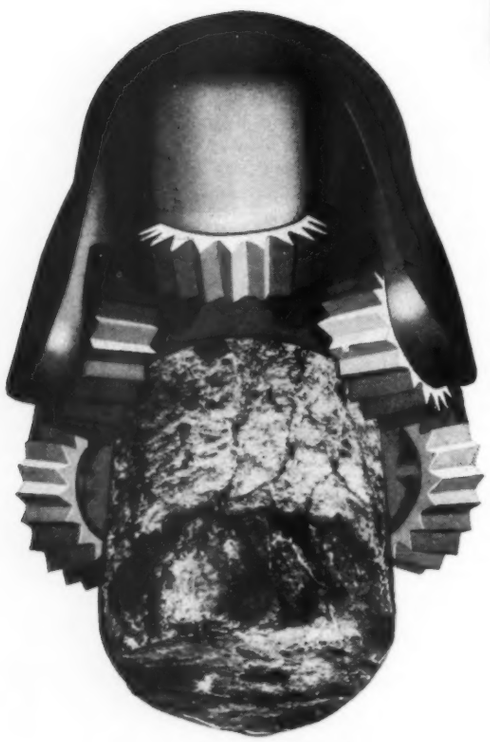
[ *For Complete data ask for BULLETIN No. 362* ]



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***Interchangeable on the same size Core Drill***

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MID-CONTINENT, ROCKY MOUNTAIN AND GULF COAST DISTRIBUTORS FOR MARTIN-DECKER PRODUCTS

*(Continued from Page 57)*

2. Ran reversing tool with a taper tap and backed off three joints; still breaking easily.
3. Ran reversing tool with taper tap but got nothing as fish was loose and swiveled, not permitting left-hand taper tap to be screwed in.
4. Ran right-hand overshot and picked up seven loose joints.
5. Ran right-hand overshot and got nothing; fish tight.

*Second Day*

1. Ran right-hand overshot and left part of it in the hole on top the fish.
2. Ran reversing tool with left-hand taper tap to try to go through overshot bowl, stab fish and bring out all; failed.
3. Ran right-hand overshot and screwed into overshot bowl, released it and came out with it.

*Third Day*

1. Ran right-hand overshot; got water haul.
2. Ran reversing tool with left-hand taper tap; backed off five joints of fish and came out with it.
3. Ran reversing tool with overshot welded right hand; backed off five joints and came out with it.

*Fourth Day*

1. Ran reversing tools with overshot; got water haul.
2. Ran reversing tool with left-hand taper tap; got 118 joints (3,658 feet), which is longest fish.
3. Ran reversing tool with overshot; got one joint.

*Fifth Day*

1. Ran reversing tool with overshot; water haul.
2. Ran reversing tool with taper tap; water haul.

*Sixth Day*

1. Ran reversing tool with overshot; got five joints.
2. Ran reversing tool with overshot; got 11 joints.

*Seventh Day*

1. Ran reversing tool with overshot; got 13 joints.
2. Washed down and reconditioned mud rest of day (using 13-pound mud).

*Eighth Day*

1. Ran reversing tool with overshot; water haul.
2. Ran reversing tool with overshot; water haul.

*Ninth Day*

1. Ran reversing tool with overshot; got 12 joints.
2. Ran reversing tool with overshot; got 14 joints.

*Tenth Day*

1. Washed down and conditioned mud.
2. Ran reversing tool with overshot; water haul.

*Eleventh Day*

Washed down and conditioned mud.

*Twelfth Day*

Ran wash pipe to wash down; stuck wash pipe and backed off at safety joint.

*Thirteenth Day*

Ran jars.

*Fourteenth Day*

Continue jarring; no success.

*Fifteenth Day*

Continue jarring; no success.

*Sixteenth Day*

Ran reversing tool with overshot to try to back out stuck wash pipe; pipe too tight.

*Seventeenth Day*

Fishing discontinued.

## Operations on Bahrein Island Are Described by Engineer

*(Continued from Page 46)*

About 200 white men are employed at this time in positions of responsibility and it is probable this number will be increased 50 per cent within the next year as the extent of the operations justify.

Not long ago two new 12-inch lines were laid out about 4 miles from the shore to serve as loading systems for steamers taking on cargo in the bay. These two lines serve for handling the "black and white" products as expressed by Mr. Nix and he went on to explain "the black line handles the crude oil while the white line handles refinery products, gasoline, kerosene and similar fluids." These two new 12-inch lines are in addition to the original 12-inch line laid some time ago and used continuously before the refinery was completed to fill the vessels handling the oil away from the island.

To empty the tankers of bilge water two 8-inch diameter lines extend from shore to anchorage. These lines can be used to handle crude or refinery products from the shore if necessary but they are laid primarily to handle bilge water which cannot be dumped overboard because of the fishing interest operating in the bay and Persian Gulf. There are many pearl fisheries off the Arabian coast and also in the bay in which Bahrein Island is located.

The balance of the pipe line system for handling crude oil on the island consists of five stations with pumps to force the oil to the storage tanks at refinery or loading terminal. These pump stations are located at the five principal field storage tank batteries and the batteries are located, wherever possible, at some point below the well-head level to assist in delivering the gas and oil into the separators located near the storage tanks. The gas, as stated, goes into the fuel distributing system and the oil into the tanks.


# WORLD'S DEEPEST FISHING JOB

HOUSTON ENGINEERS, INC.,
REVERSING TOOL
*Proven in the Field for Sixteen Years*

The H-E Reversing Tool takes the place, and does the work, of a full string of left-hand drill pipe. For backing off stuck or twisted-off pipe, no tool or method is more efficient or economical.

When made up on your regular string of right-hand drill pipe, the H-E Reversing Tool imparts left-hand rotation to taper-taps, box-taps or other grapple connected below it. By using left-hand thread grapples, the stuck pipe or drill stem can almost invariably be engaged, backed-off and pulled out. When friction between fish and walls of hole is not too great, it is common to recover 1500 to 2000 feet of pipe at a trip. 3000 feet has been recovered on a single run.

If fish can not be pulled after being engaged, it is only necessary to start pump, lock tool, and rotate to the right to disengage grapple. Pump pressure makes all parts of tool rotate as a unit in one direction. This tool is safe, practical and economical to use, and over a period of years has proven its ability to handle some of the most difficult fishing jobs. Complete details will gladly be forwarded on request. Patents: 1,334,487 and 1,627,842.

*Accomplished With*

## HOUSTON ENGINEERS, Inc.
## REVERSING TOOL
(EDWARDS "BACK-OFF TOOL")

3" internal flush drill pipe, stuck in the world's second deepest test well at 11,732 feet, was cleaned out from 3,300 feet to 10,907 feet with the Houston Engineers, Inc., Reversing Tool.

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Complete stock of both left and right hand Spears, Overshots, Taper Taps and Box Taps for rent.

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HOUSTON, TEXAS

# PROBLEMS FROM READERS

Edited by L. G. E. Bignell

## Procedure for the Determination of Permeability of Porous Media

***I would like to know if there is any standard procedure for the laboratory examination of oil field cores designed to obtain coordinated results for the determination of oil saturation, oil-water ratios, porosity, grain size of sands, chloride content, water content and salinity of water contained in core.—J. G. C.***

To secure uniform method for determining the characteristics of a core it is suggested you secure from the American Petroleum Institute a copy of A.P.I. Code No. 27, "Standard Procedure for Determination of Permeability of Porous Media." This will give you the approved laboratory methods for examining the cores.

For grain size a standard set of screens approved by the U. S. Bureau of Standards should be used. Several screen manufacturers make sets of laboratory screens for this purpose.

For determination of chloride content, water content and salinity of water contained in the core the following is regular procedure. For chloride contents the silver nitrate method is usually used. Bean and Stark method approved by the U. S. Bureau of Mines is usually used in oil-field laboratories for determining water content, and for determination of salinity of water it is usual to compute total solid from chlorides in core.

## Where Is World's Largest Pumping Well Located?

***In a recent argument between two oil men as to which was the largest production from any one pumping well in the world one of them stated that he knew of a well in West Texas which was pumping 11,000 bbls. of fluid per day, mostly salt water, and he believed this is the world's record for a pumping well. Could you advise us as to whether or not this is a world's record and also what is the largest amount of production from the largest pumping producer?—E. L. W.***

In reply to your question, we know of many wells in the Hendricks field, Winkler County, Texas, producing 10,000 bbls. of fluid or more, but they are not really pumpers. In the same field there are many wells still flowing fluid in large volumes, and there is sufficient hydrostatic pressure in the formation to make these wells flow as artesian wells.

It is also true that many wells are equipped with pumping equipment, but the leasemen know that the principle function of the working barrel and valves in the hole is to agitate the fluid. In one instance it is reported that a well increased its flow by about 2,000 bbls. per day, or from around 3,000 to 5,000 bbls., and dynamometer tests taken before and after changing the type working barrels showed very little additional load on the sucker rods. This could only be true when the fluid flowed under hydrostatic pressure. When the increase in production was recorded the size of the working barrel had been greatly increased.

There is no way of finding out the volume of fluid a well will produce by pumping except by calculating the displacement of the traveling valve in the working barrel. Allowing for slippage and mechanical efficiency the capacity of a well can be estimated and it is possible to find many wells capable of delivering all the fluid that the largest pump can handle. But as there are economical limits beyond which it is not practicable to pump fluid out of a hole the pumping wells are usually limited by other than mechanical equipment. Area of plunger times length of stroke and number of strokes will give theoretical displacement of a pump. From this must be deducted the mechanical efficiency of the unit and slippage in the tubing.

In answering this argument it is our opinion that the men should differentiate between the fluid actually pumped and the fluid produced from a well by agitation and hydrostatic pressure flow. We would not class the wells in Hendricks field, West Texas, as true pumpers.

## Where Did Granite Wash Material Come From?

***Can you give any explanation about the origin of the so-called Granite Wash of the Texas Panhandle? Was it laid down in receding or advancing seas?—H. C. P.***

Material very similar to the Granite Wash of the Texas Panhandle may be seen from the trains going over Sheridan Pass west of Cheyenne, Wyo. This material is disintegrated igneous rock produced by weathering. It seems quite probable the Granite Wash material of the Texas Panhandle was created in the same manner and was distributed during the period of the advancing sea of that era. It is evident the granite ridge from which this loose material was broken was covered by the sea because later formations have been laid down over the Granite Wash formation. The oil found in the Granite Wash was probably formed from organic material carried in the sea and because shale beds are missing it would seem that the oil was indigneous to the limes which cover the wash material and the oil escaped from the limestone into the pore space in the granite mass.

## Table of Gas Requirements

***Do you know of any reliable table showing the quantity of gas needed to operate gas engines?—E. Y. F.***

F. H. Oliphant put out the following table some years ago, but it is still reliable and may be used in estimating gas requirements for various types of gas engines.

The quantity of gas necessary to operate a gas engine will vary from 9 to 18 cubic feet per horsepower-hour, depending on the size, type, and age of the engine and the care it has received. Boilers in a steam plant require 40 to 120 feet per horsepower-hour. A plant having six 80-horsepower, direct-connected, horizontal, two-cycle gas engines used between 12 and 14 feet. The engines had been in service two years and had been well cared for. The large 450- to 1,100-horsepower, horizontal, direct-connected, tandem, double-acting, four-cycle units will use as little as 9 feet, and the 150- to 200-horsepower, vertical, four-cylinder, four-cycle, belted units will use 10 to 14 feet per horsepower-hour.

The following table showing the average amount of natural gas required to operate gas engines or to supply a steam-engine plant using natural gas as fuel under the boilers in cubic feet per indicated horsepower-hour:

CUBIC FEET OF NATURAL GAS REQUIRED PER HORSEPOWER-HOUR TO DRIVE A GAS ENGINE OR STEAM PLANT

| | Cu. ft. |
|---|---|
| Large gas engine, highest type | 9 |
| Ordinary gas engine | 13 |
| Triple-expansion condensing steam engine | 16 |
| Double-expansion condensing steam engine | 20 |
| Single-cylinder steam engine with cut-off | 40 |
| Ordinary high-pressure steam engine without cut-off | 80 |
| Ordinary oil-well pumping steam engine | 130 |

From 10 to 12 cubic feet of air is necessary for complete combusion of 1 cubic foot of natural gas.

## Ozocerite Flows Into Hole

***We are drilling a well in southern Alberta, Canada, and are now at a depth of about 5,172 feet where we have had trouble with some kind of a "gooey" material flowing into the hole. The formation dips very steeply in this area, about 45 to 55 degrees from the horizontal. After drilling through this sticky material the well was cemented and allowed to stand but when the hole was redrilled through the cement this material again flowed into the hole. We are having trouble bailing the material out of the hole and every morning there is another 8 to 10 feet accumulated. Will you kindly try to assist us by suggesting some method of preventing further flow of this objectionable material? —W. J. McK.***

From your description of this material it seems very similar to ozocerite found in some of the wells in the Kevin-Sunburst and Pondera fields in northern Montana. It has been determined that at the top of the Madison limestone there is an old eroded surface into which oil has seeped during the period when the Madison formation was a land surface. Like oil seeps now found on the surface, the material has hardened in various degrees, some being brittle and classified as elaterite or grahamite, while some of the bituminous material is soft and sticky.

In the Kevin-Sunburst and in the Pondera fields many wells have experienced much trouble in cleaning out the holes after acidizing. Just below the surface of the Madison limestone there is a layer of very soft limestone, highly soluble. The acid seems to dissolve the limestone completely and then this soft ozocerite flows into the well and it is very hard to bail it out and keep the hole clean.

Hot kerosene has been used in an effort to soften this bituminous material, but as soon as the heat is lost from the kerosene the material immediately sets up hard again. Some samples taken from one of the wells in Pondera field were so stiff at room temperature that it could not be poured out of a mason jar.

The best suggestion we can make is to find some form of solvent for the ozocerite. The usual solvents used in laboratories, such as carbon tetrachloride, ether or chloroform, are not practical. If sufficient gasoline or paraffin solvent is used it should be possible to remove this material by bailing, and how long it will be necessary to continue bailing will depend upon the amount of this material adjacent to the hole. It may require as much as 75 per cent by volume of kerosene to liquefy this mass. It may be possible to bail out enough material to reduce the flow into the hole to a minimum and then set a liner and cement back of it, but if it is the same class material as found in northern Montana it will take some time to get a clean hole through this section, especially if the formation dips steeply.

Temperature may have some effect on this material, and it might be possible to force a liner through the mass and then set it by lowering the temperature, using dry ice or water ice. The formations in northern Montana have relatively low temperatures, around 60° F., but this is not cool enough to set this material. The room temperature at which this material set was about 40° F. If the mason jar was set on a steam radiator the ozocerite melted and flowed freely.

You have a mean problem, and it will be necessary to remove as much of this sticky stuff from the hole as possible before liner or pipe can be set and cemented, but as it is probable the producing horizon may be found below this upper strata it should be worth test cost and effort to try to carry the hole into production.

# QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

## Complete Inspection of Solutions for Doctor Treatment Required

***What is the best test for showing when a doctor solution is going off and should be changed?—F. C.***

The control of doctor treating, or, as it is often called, sweetening, is no longer a hit or miss operation. All refineries now make use of chemical analyses, which are a daily routine. The information from these inspections make it possible to maintain some selected condition at all times. Lead content and alkalinity being important and too much sulfur must not be used.

There is no one test that can be applied to guide for the strength of the doctor solution and operation. The sulfur content of the product must be kept low to comply with established specifications; so much attention is given to this by purchasers that the control of the sulfur content is essential. The solubility of sulfur in kerosene and gasoline is such that it is very easy to produce a finished product containing excessive sulfur, even more than the raw product. The test for free sulfur with pure mercury is easy to make. When a few cubic centimeters of the product in a test tube containing a drop or two of mercury is warmed, there should be no darkening of the mercury. If the mercury blackens, sulfur is present.

The doctor solution should be clean at all times and the strength maintained. Refiners use solutions of varying alkalinity and consequently some slight difference in the quantity of lead in solution will be found. The chemical inspections made in the laboratory each day include determinations of the lead content, so that litharge may be added if required; the alkalinity tests serve to control the sodium hydroxide content. Color and impurities frequently help to decide when a doctor solution should be discarded. Gravity is considered to give only a very approximate indication of the condition of the plumbite solution.

Many refineries record from charge to charge the strength of the solutions and the treating conditions; these may include—gravity of charge and solutions, color changes, the quantities of acid (if used), sodium hydroxide, litharge and sulfur consumed.

## Oiliness of Oils Explained as Due to Protopetrolatum

***Do you have the information that explains the meaning of proto bodies as being responsible for the oiliness property of lubricating oils?—V. H.***

It has been explained by C. A. Wardner in The Oil and Gas Journal, that a Pennsylvania grade long residuum oil yields petrolatum and lubricating oil, which upon extraction leaves a residual "proto" substance. This is a very viscous, unctuous material having a consistency similar to that of honey. This was designated protopetrolatum and assigned the role of a pectizer in the petroleum structure.

A lubricating oil, according to Mr. Wardner, may be a liquid comprising a carrier (the oil) and the oiliness imparting substance, the proto oils. The proto oils prevent surface contact, while the oil serves as a diluent in removing and supplying the active constituent to the moving surfaces.

"The lubricating oil which contains the higher per cent of proto oil invariably gives the higher transition point on the consistometer. Consequently, comparison of oils possessing the same viscosity at 210° F. shows that a Pennsylvania Grade normally dewaxed oil has a higher transition point than either a Pennsylvania Grade excessively dewaxed or a western oil, these two giving identical values.

"The difference in behavior of a normal and an excessively dewaxed Pennsylvania Grade oil brings into consideration the sensitiveness of the proto oils to modern refinery methods. The necessity for an adequate and careful control of each process becomes of greatest importance in the conservation of these compounds. Their partial solubility in naphtha solution at the low chilling temperatures will invariably precipitate a considerable quantity of them during dewaxing as established by the acetone-insoluble protopetrolatum. What will happen during an excessive dewaxing by the same method can readily be visualized. Likewise, other processes such as excessive filtration through fuller's earth, or sulfuric acid treatment, both of which are very severe in removing and destroying the proto oils, will reduce the lubricating qualities of an oil."

Reference: C. A. Wardner, The Oil and Gas Journal, February 1, 1934, page 12.

## SPECIFICATIONS

### NATURAL GASOLINE

A liquid petroleum product derived from natural gas meeting the following general specifications:

| | |
|---|---|
| Vapor pressure (Reid) lbs./sq.in.@100°F. | 10-34 |
| Distillation: | |
| Evaporated at 140° F., per cent | 25-85 |
| Evaporated at 275° F., per cent | 90 |
| Endpoint max., °F. | 375 |
| Corrosion | Negative |
| Doctor test | Negative |
| Color Saybolt, min. | 25 |

Natural gasoline shall be divided into 24 possible grades, classified according to percentages evaporated at 140° F. and vapor pressure, of which there shall be six types, each having a range of 4 lbs. from 10 to 34 lbs. vapor pressure and four types each varying 15 per cent evaporated at 140° F. from 25 to 85 per cent; each grade being identified by maximum vapor pressure and its minimum per cent evaporated as shown in the table:

GRADES OF NATURAL GASOLINE

| Vapor pressure Lbs./sq. in. | Percentage evaporated at 140° F. 25 | 40 | 55 | 70 | 85 |
|---|---|---|---|---|---|
| 34 | Grade 34-25 | Grade 34-40 | Grade 34-55 | Grade 34-70 | |
| 30 | 30-25 | 30-40 | 30-55 | 30-70 | |
| 26 | 26-25 | 26-40 | 26-55 | 26-70 | |
| 22 | 22-25 | 22-40 | 22-55 | 22-70 | |
| 18 | 18-25 | 18-40 | 18-55 | 18-70 | |
| 14 | 14-25 | 14-40 | 14-55 | 14-70 | |
| 10 | | | | | |

The maximum vapor pressure for each is 14, 18, 22, 26, 30 and 34. The percentage evaporated requirements are minimum, 25, 40, 55 and 70.

Reference: Official Specifications, Natural Gasoline Association of America, Tulsa, Okla.

## Sour Has a Technical Meaning in the Petroleum Industry

***In your section of The Oil and Gas Journal from time to time you publish definitions of various terms used in the oil industry and I would appreciate it if you will be kind enough to give your definition of "sour oil."—W. T. D.***

The word sour, as used in the petroleum industry, has a special or technical meaning. When used in a general way it refers to odor; any gas or crude oil having a disagreeable, unpleasant odor is said to be sour. Usually the bad odor is due to some sulfur compound, especially hydrogen sulfide.

Another meaning is that used for interpreting the doctor test when inspecting naphthas, gasoline or kerosene. This test is made by shaking some of the product with sodium plumbite (sodium hydroxide saturated with litharge). If hydrogen sulfide is present the sample becomes brown, changing to a black precipitate. Next a pinch of sulfur is added and the mixture again shaken. If mercaptans are present, with no more than a trace of hydrogen sulfide, the sample will become yellow to orange, a precipitate slowly forming which upon standing finally turns to black. When there is no reaction at any stage the result may be recorded as negative or "sweet" and if there is a definite reaction the sample tested may be classified as positive or "sour."

The doctor test provides a means for detecting small quantities of mercaptans (yellow to orange) and hydrogen sulfide (brown to black). It gives no indication of the total sulfur and does not react with free sulfur.

## Raising Octane Rating of Straight-run Gasoline

***We are producing a straight-run gasoline from Oklahoma crude of about 51 octane number. How can we get this up to 58 or 60 without using benzol? Would natural gasoline be satisfactory?—J. H.***

The methods commonly used for appreciably increasing the octane value of gasoline involve special refining operations and the addition of aromatic compounds or special chemicals.

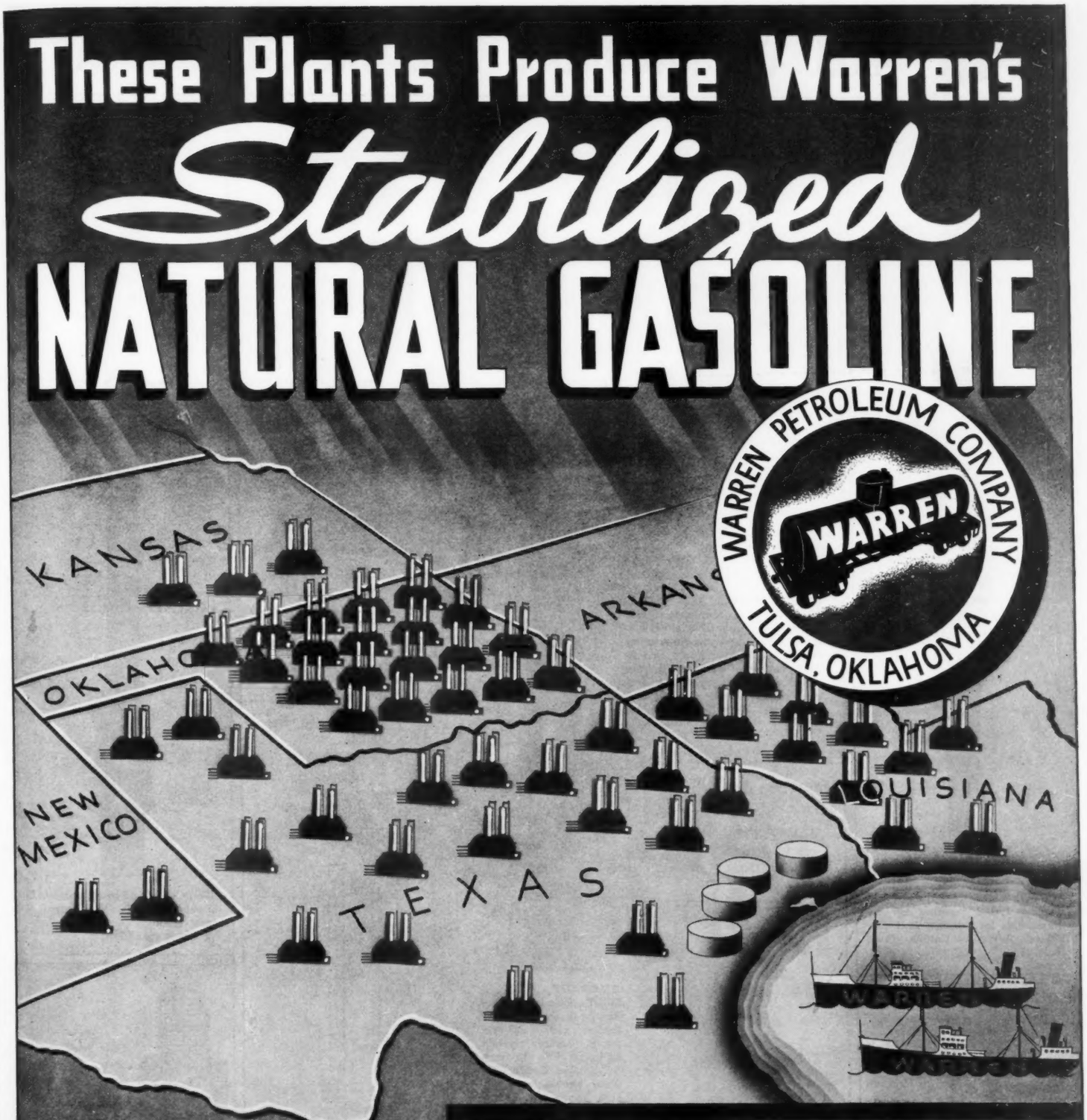
The cracking process yields an improved motor gasoline over that made by the skimming operation and the recently perfected polymerization process is now furnishing a gasoline of exceptionally high octane value. When neither a cracked product nor a polymerized gasoline is available for blending with a straightrun gasoline to improve the octane value it is necessary to make use of outside materials. The materials used include aromatics that have a very high octane rating, such as benzol, and very powerful knock inhibiting chemicals. The most powerful chemical of this type, now known, is tetraethyl lead.

The addition of natural gasoline, in economical quantities, to a low octane gasoline cannot serve to raise the octane rating to the extent of 7 to 9 points, as would be required when blending with a refining stock testing 51 octane number.

A suitable natural gasoline may be blended with a gasoline of this grade to the extent of 20 per cent and an increase of 3 points to 54 be reasonably expected. The results may vary above or below this depending upon the grade and the quantity of natural gasoline used.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

# These Plants Produce Warren's *Stabilized* NATURAL GASOLINE




## JUST NATURAL GASOLINE

**There's safety in numbers. The output of the large number of natural gasoline plants shown above insures Warren customers of both the Quality and Quantity of Stabilized Natural Gasoline necessary for the exacting demands of both Domestic and Export markets.**

**This vast Warren producing network, strategically located throughout Oklahoma, Texas, Louisiana, Kansas and New Mexico, plus Warren's adequate storage and transportation facilities insures prompt delivery.**

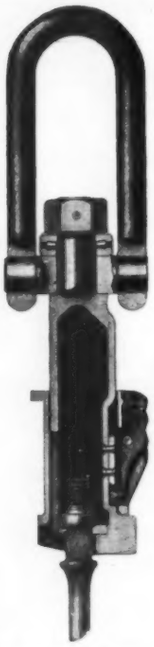
**And what's more, refiners can depend upon the consistent uniformity of the High Octane, Quick Starting, Carbon Free, Knockless elements so necessary to their requirements for blending purposes.**

**And Warren markets "Just Natural Gasoline."**

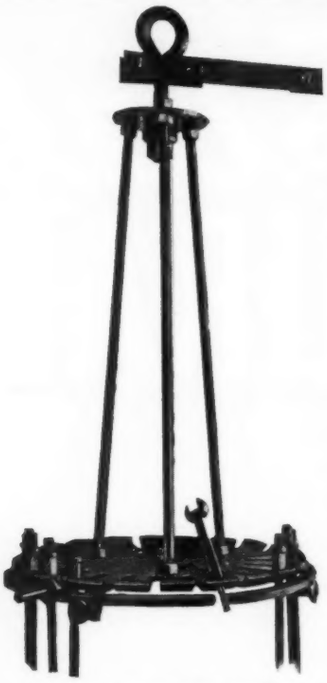
**WARREN PETROLEUM COMPANY**
**Tulsa, Oklahoma**
**MANUFACTURERS, EXPORTERS AND MARKETERS**
**Export Terminal, Norsworthy, Houston, Texas**

# AXELSON PRODUCTS ARE ONE STEP AHEAD

SUCKER RODS—Manufactured in specific types, meeting all requirements for varying well conditions. Write for Catalog Sheet No. 703.



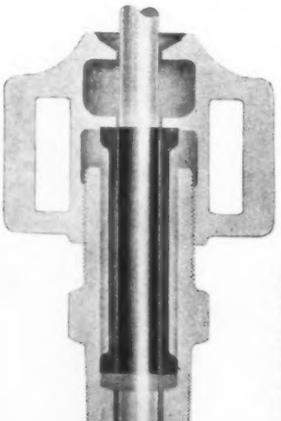
SAFETY SUCKER ROD ELEVATOR—Used in conjunction with Safety Rod Hanger. Highest factor of safety under all operating conditions. Hangs freely in vertical position at all times. Unique construction and operating features permit handling speed and efficiency. Write for further details.



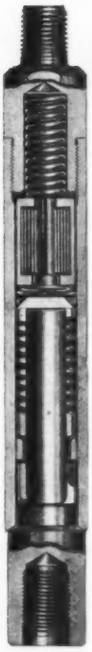
SAFETY SUCKER ROD HANGER—Incorporates numerous safety features. Furnished complete with suitable supporting members and anchorage. Fast and efficient in use. Write for further details.

SUB ROD—Used for spacing rods to proper length. Full range of sizes. Write for descriptive Catalog Sheet No. 706.

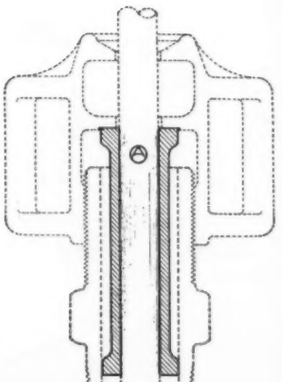
SUCKER ROD COUPLINGS—Manufactured to same high standards as Axelson Sucker Rods. Couplings are available in plain and hardened and ground. Write for descriptive Catalog Sheet No. 707.



SELF-ALIGNING STUFFING BOX—Metal-to-metal seal. Accurately fits polished rod. Ball joint on followers makes the box 100% self-aligning. Grease fitting permits lubrication of polished rod and ball joint. No grease leakage.



ON-OR-OFF ATTACHMENT—Permits connection or disconnection of sucker rods at the pump. Insures against stripping jobs in any installation. Guide coupling should be used both above and below this unit in the rod string.



FRAHM STUFFING BOX FOLLOWER—Seals around the polished rod for long periods of time without leaking and seals without repacking or adjusting. Will not burn for lack of lubrication if the well pumps off. Removes fire hazard.

SUB COUPLINGS BOX AND PIN—Used in connecting sucker rods to cages, polished rods, etc. Write for descriptive Catalog Sheet No. 707.

Axelson Manufacturing Company, P. O. Box 710, Vernon Station, Los Angeles . . St. Louis . . 50 Church Street, New York . . Tulsa Mid-Continent and Eastern Distributors: Frick-Reid Supply Corporation . . Rocky Mountain Distributor: Great Northern Tool & Supply Company

OIL WELL PUMPS **AXELSON** SUCKER RODS

# FIELD OPERATIONS

## *Summarizing the Week's Developments*

Four Oklahoma wildcats were being watched as decisions neared. Power Oil Co. and others wildcat near Sulphur in Murray County, cored saturated lime, set tubing and was due for a test. It is given a good chance of opening another graben, similar to the Fitts pool, on the north slope of the Arbuckle Mountains. Sinclair Prairie Oil Co. Love County wildcat made a head flow of 130 bbls. in 3 hours and then went dead. Operators were preparing for further tests. Pure Oil Co. No. 1 Baker, wildcat in Garvin County, was running high structurally, and the Ed Parsons deep test, north of the Duncan field in Stephens County, reported a good showing of oil in sand and was testing.

### KANSAS

Big wells in the Trapp pool of Russell County, Warkentine pool of Harvey County and Schartz pool of Rice County featured the week's field operations in Kansas. Observers believe the Schartz pool may prove to be an east extension of the big Silica field, and that the Trapp pool may connect with the Hall pool to the north. The new Harvey County well extended the Warkentine pool one-half mile north and with its potential of 2,580 bbls. is rated as the biggest producer to be completed in that area. The Olson Drilling Co. wildcat in Clark County continued to swab and was heading oil, production coming from Viola lime.

### TEXAS

The fourth producing well in the Sulphur Bluff pool in Hopkins County, northeastern Texas, is due this week. It had 20 feet of highly saturated sand at 4,500-20 feet. Talco field operators are protesting against the action of the Railroad Commission in cutting down their per-well production 25 per cent, or to 75 bbls. per day. In West Texas, Winkler County accounted for a host of good new wells averaging over 1,000 bbls. per well initially. The several important wildcat discovery wells in the Permian Basin were still incomplete. In Southwest Texas the Saxet, Government Wells and Bentonville pools were extended and a fault line wildcat showed oil. Several wildcat dry holes were reported in the district. The city of Houston may be sitting over an oil or gas field. A test just outside the city limits blew out while coring at 8,101 feet. It was later shut in. The Lockridge gas field in Brazoria County looks more like an important oil field than ever as the second oil test in the field is showing oil a mile south of the discovery well, which was a distillate producer. In the Louisiana Coastal district three wildcat locations were made in St. Landry, St. Martin and Lafourche parishes.

### LOUISIANA-TEXAS

Now that the limits of the Louisiana side of the Rodessa field are pretty well defined, operators there are becoming interested in the deeper possibilities of the field. R. W. Norton, who opened Rodessa as an oil field is one of those who will test the lower levels. The Benedum-Trees discovery in Nevada County, Arkansas, is believed now to have opened a new pool 3 miles south of the Irma pool.

### NEBRASKA

The exploration of Nebraska for new oil fields received a setback when a test in Grant County hit granite unexpectedly high and was abandoned.

### CALIFORNIA

Shell Petroleum has a second well in the Ten Section field in Kern County, California, flowing 1,600 bbls. initially of 34 gravity oil. The discovery well produced 60 gravity crude.

### ILLINOIS

The first tests in the campaign to explore the Illinois Central Basin for deep sand production have been started in Clay and Wayne counties by Pure Oil Co. The tests are located southwest of the old Eastern Illinois fields.

## *Completions in All Fields*

(Week Ending October 31, 1936)

| | Oil | Gas | Dry | Total | 1936 total comp. to date | 1935 total comp. to date |
|---|---|---|---|---|---|---|
| **Penna. Grade Fields** | 66 | 17 | 7 | 90 | 2,887 | 2,494 |
| **Lima Field** | 0 | 0 | 0 | 0 | 75 | 81 |
| **Central Ohio** | 0 | 11 | 5 | 16 | 327 | 265 |
| **Indiana** | 0 | 0 | 0 | 0 | 147 | 175 |
| **Illinois** | 0 | 0 | 0 | 0 | 26 | 11 |
| **Michigan** | 2 | 4 | 8 | 14 | 544 | 478 |
| **Kentucky** | 10 | 0 | 3 | 13 | 240 | 211 |
| **Kansas** | 27 | 0 | 7 | 34 | 1,374 | 1,018 |
| **Oklahoma** | 36 | 4 | 16 | 56 | 2,075 | 1,674 |
| **North Central Texas** | 29 | 0 | 26 | 55 | 2,082 | 2,181 |
| **West Texas** | 31 | 1 | 2 | 34 | 1,283 | 675 |
| **Texas Panhandle** | 12 | 3 | 0 | 15 | 549 | 590 |
| **East Central Texas** | 8 | 0 | 0 | 8 | 306 | 203 |
| **East Texas** | 46 | 0 | 1 | 47 | 2,115 | 3,639 |
| **East Texas border** | 4 | 0 | 2 | 6 | 92 | 8 |
| **Gulf Coast Texas** | 14 | 0 | 3 | 17 | 977 | 874 |
| **Southwest Texas** | 46 | 4 | 11 | 61 | 2,476 | 1,279 |
| **Total Texas** | 190 | 8 | 45 | 243 | 9,880 | 9,499 |
| **North Louisiana** | 8 | 1 | 4 | 13 | 539 | 268 |
| **Gulf Coast Louisiana** | 5 | 0 | 4 | 9 | 307 | 295 |
| **Total Louisiana** | 13 | 1 | 8 | 22 | 846 | 563 |
| **Arkansas** | 0 | 0 | 1 | 1 | 74 | 103 |
| **Montana** | 1 | 0 | 2 | 3 | 193 | 148 |
| **Wyoming** | 1 | 0 | 0 | 1 | 84 | 69 |
| **Colorado** | 0 | 0 | 0 | 0 | 22 | 14 |
| **New Mexico** | 8 | 0 | 0 | 8 | 495 | 269 |
| **Utah** | 0 | 0 | 0 | 0 | 5 | 5 |
| **California** | 16 | 0 | 11 | 27 | 1,028 | 934 |
| **Total United States** | 370 | 45 | 113 | 528 | 20,322 | 17,961 |
| **Total previous week** | 385 | 55 | 111 | 551 | | |
| **Difference** | 15 | 10 | 2 | 23 | | |

## *Outstanding Fields—Highlights*

(Week Ending October 31, 1936)

| FIELD— | Rigs up | Wells drlg. | Weekly oil completions | Initial prod. | Total No. oil wells | Daily av. prod. |
|---|---|---|---|---|---|---|
| **TEXAS** | | | | | | |
| **Anahuac** | 4 | 6 | 1 | 456 | 128 | 8,968 |
| **Hastings** | 6 | 6 | 3 | 1,618 | 106 | 9,794 |
| **Loma Novia** | 3 | 4 | 1 | 260 | 602 | 14,800 |
| **Seven Sisters** | 3 | 7 | 7 | 2,520 | 312 | 7,495 |
| **Saxet Heights** | 1 | 9 | 5 | 1,020 | 184 | 19,350 |
| **Saxet** | 3 | 30 | 7 | 887 | 252 | 8,935 |
| **Lopez** | 4 | 7 | 6 | 2,472 | 213 | 5,220 |
| **East Texas** | 64 | 88 | 46 | 1,723 | 21,593 | 444,650 |
| **Talco** | 18 | 28 | 4 | 1,303 | 88 | 8,769 |
| **OKLAHOMA** | | | | | | |
| **Oklahoma City** | 3 | 11 | 1 | 531 | 1,078 | 139,750 |
| **Fitts** | 10 | 58 | 5 | 7,703 | 503 | 69,050 |
| **Burbank-So. Burbank** | 2 | 9 | 1 | 908 | 2,151 | 22,175 |
| **KANSAS** | | | | | | |
| **Ellis County** | 5 | 22 | 2 | 3,795 | 59 | 3,030 |
| **Reno County** | 4 | 23 | 3 | 2,018 | 333 | 15,155 |
| **Russell County** | 5 | 44 | 6 | 9,971 | 496 | 24,361 |
| **Rice County** | 7 | 45 | 4 | 4,181 | 609 | 34,870 |
| **NEW MEXICO** | | | | | | |
| **Lea County** | 14 | 91 | 8 | 4,241 | 470 | 77,230 |
| **LOUISIANA-TEXAS** | | | | | | |
| **Rodessa, La.** | 3 | 25 | 2 | 1,680 | 310 | 54,385 |
| **Rodessa, Tex.** | 12 | 53 | 4 | 2,546 | 77 | 15,790 |
| **Gillis, La.** | 3 | 5 | 0 | 0 | 47 | 16,897 |
| **Tepetate, La.** | 2 | 4 | 1 | 116 | 34 | 5,557 |
| **MICHIGAN** | | | | | | |
| **Porter-Yost** | 4 | 13 | 0 | 0 | 415 | 14,900 |
| **Crystal-Montcalm** | 11 | 5 | 0 | 0 | 144 | 4,600 |

# Oklahoma Operations

By
DAL DALRYMPLE

# FOUR STATE WILDCATS NEAR DECISIONS; JESSE EXTENDED

Oklahoma wildcats in four southern sectors held state oil interest during the past week, while operations in proven areas were largely routine. The Murray County wildcat, originally styled Power Oil Co. and others No. 1 Lancaster Trust Co., C SW NE section 10-1s-2e, set 7-inch casing on top of lime after coring saturated Hunton lime from 2,950 feet to 3,002 feet, total depth. The lime was found high, which fact, with the showing of oil, indicates another graben on the north side of the Arbuckle Mountains may have been found. Sinclair Prairie Oil Co. has taken over operation of the community block on which the well is located. Considerable leasing was reported in the district, with the operators buying protection acreage.

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW section 26-6s-2w, temperamental Love County wildcat, after being quiescent for some time, again claimed attention when it suddenly came to life and made a head flow the past week. After a bridge was knocked out, it headed 100 bbls. of oil the first hour, 20 bbls. the second hour and 10 bbls. the third hour and then went dead. Production was through casing, oil coming from sand at 6,900-20 feet. The hole originally was bottomed at 8,583 feet and plugged back to 6,927 feet. Operators were preparing to test further.

In Garvin County, Pure Oil Co. No. 1 Baker, NE cor. section 7-2n-1e, wildcat south of Pauls Valley, was reported running high as it drilled ahead in cherty lime at 3,840 feet. Cores taken at 3,831-37 feet had stains of dead oil. Top of Bromide was 3,751 feet, much higher than in other tests in the area.

The deep well north of the Duncan pool in Stephens County, Ed Parsons No. 1 Olson, C SW SW section 21-2n-8w, reported a good show of oil in sand at 5,205-09 feet, total depth, and operators were trying to make a drill stem test after first test failed.

The Fitts and Jesse areas of Pontotoc County and the adjacent sectors of Coal County continued the most active in the state. W. A. Delaney No. 1 Sawyer, SW SE NW section 7-1n-8e, which extended the Jesse pool into Coal County, was due to be opened after acidizing. It had a small natural flowing production in the Bromide.

## Pontotoc County

Five new producers were completed in the Fitts field, Pontotoc County. Simpson-Fell Oil Co. No. 4 Westheimer, NE SE NE section 27-2-7, topped Viola lime at 3,776 feet; Bromide, 4,030 feet; McLish, 4,250 feet; total depth, 4,277 feet, was acidized and made potential of 3,051 bbls.

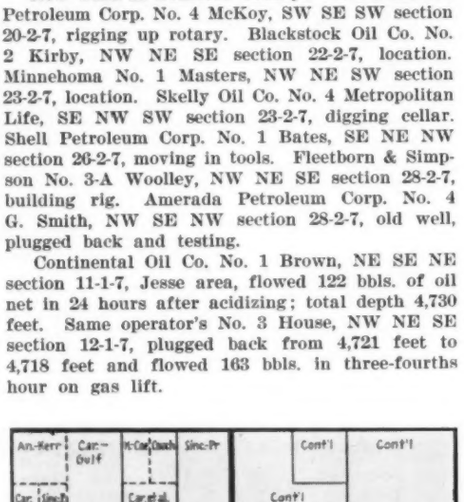
Skelly Oil Co. No. 16 Park College, NE SW NE section 28-2-7, flowed 586 bbls. through tubing in 3 hours, from Hunton lime topped at 3,289 feet. Top of Sylvan was 3,559 feet; total depth, 3,565 feet.

Carter Oil Co. No. 21 Richards, NW NW SE section 30-2-7, topped Hunton at 3,259 feet; Sylvan, 3,571 feet; total depth, 3,576 feet; acidized and flowed 525 bbls. in 2½ hours through casing and tubing; acidized a second time, and flowed 1,556 bbls. in 3½ hours. Magnolia Petroleum Co. No. 8 Burris "B," NE SE NE section 28-2-7, flowed 573 bbls. in 2 hours after acidizing Hunton lime topped at 3,311 feet. Top of Sylvan was 3,625 feet; total depth, 3,629 feet. Same operator's No. 24 Metropolitan Life, NE NW NE section 27-2-7, topped Viola lime at 3,887 feet; Bromide, 4,160 feet; total depth, 4,285 feet. It was acidized with 10,000 gallons and made potential of 2,968 bbls.

Mary F. Oil Co. and others No. 3 Miller, SW NE SE section 16-5-8, in the Allen district, pumped 8 bbls. of oil in 24 hours from sand topped at 936 feet; total depth 947 feet, completed.

New work in Pontotoc County: Mid-Continent Petroleum Corp. No. 4 McKoy, SW SE SW section 20-2-7, rigging up rotary. Blackstock Oil Co. No. 2 Kirby, NW NE SE section 22-2-7, location. Minnehoma No. 1 Masters, NW NE SW section 23-2-7, location. Skelly Oil Co. No. 4 Metropolitan Life, SE NW SW section 23-2-7, digging cellar. Shell Petroleum Corp. No. 1 Bates, SE NE NW section 26-2-7, moving in tools. Fleetborn & Simpson No. 3-A Woolley, NW NE SE section 28-2-7, building rig. Amerada Petroleum Corp. No. 4 G. Smith, NW SE NW section 28-2-7, old well, plugged back and testing.

Continental Oil Co. No. 1 Brown, NE SE NE section 11-1-7, Jesse area, flowed 122 bbls. of oil net in 24 hours after acidizing; total depth 4,730 feet. Same operator's No. 3 House, NW NE SE section 12-1-7, plugged back from 4,721 feet to 4,718 feet and flowed 163 bbls. in three-fourths hour on gas lift.




—Mid-Continent Map Co., Tulsa.

***Map showing east side of Jesse pool in Pontotoc County, and location of Delaney well which extended production into Coal County, in section 7-1n-8e***

W. A. Delaney and Choctaw Oil Co. No. 1 Sawyer, SW SE NW section 7-1n-8, which extended the Jesse pool across the county line into Coal County, was preparing to test after running 2½-inch tubing to 4,424 feet.

## Seminole County

Deep Rock Oil Corp. No. 5 Hagler, NE cor. section 19-9-7, Seminole County, topped Hunton lime at 4,018 feet; total depth, 4,081 feet; was acidized and pumped 80 bbls. of oil and 80 bbls. of water in 24 hours, completed. Same operator's No. 6 Hagler, SE NE NE section 19-9-7, flowed 65 bbls. of oil in 24 hours from Cromwell sand, topped at 3,464 feet; total depth, 3,484 feet.

Texas Co. No. 5 Steward, NE SE NW section 19-9-7, flowed 80 bbls. of oil net in 24 hours after acidizing Hunton lime, topped at 4,057 feet; total depth, 4,098 feet. B. F. Green No. 3-A Spillman, SE NW SW section 7-6-8, topped Gilcrease sand at 2,779 feet; based it at 2,810 feet; total depth, 2,835 feet. It was shot and pumped 10 bbls. of oil in 24 hours. Sinclair Prairie Oil Co. No. 4 T. Harjo, SW SW NW section 7-5-8, swabbed 68 bbls. of oil in 24 hours after a shot; top of Wilcox sand was 4,165 feet; total depth, 4,177 feet.

Gulf Oil Corp. No. 1 M. Fife, C W half SE SE section 2-10-6, topped Hunton lime at 4,318 feet and was dry and abandoned at 4,328 feet, total depth. Magnolia Petroleum Co. No. 4 Reed, NE NE NW section 34-8-8, an old well, was plugged back from 4,202 feet to 3,322 feet, had a hole full of water after a shot and was dry and abandoned.

Oklahoma Oil Corp. No. 1-A Carter, SW NE NE SE section 23-9-6, an old well, was plugged back from 3,935 feet to 2,500 feet, shot and pumped 25 bbls. of oil and 200 bbls. of water in 24 hours.

Two new operations were reported in Seminole County: Magnolia Petroleum Co. No. 3 Browning, NW SE NW section 14-10-6, an old well, was preparing to deepen. T. B. Pickens and others No. 1 Culley, SE NW NW section 31-6-8, was moving in rotary.

Phillips Petroleum Co. No. 4 Booze, NW NE SE section 9-7-4, an old well, plugged back from 4,005 feet to 3,502 feet, shot, swabbed 10 bbls. of oil in 1½ hours and was cleaning out. W. G. & B. H. Rogers No. 1 Campbell, NW SE NE section 17-9-7, was bottomed at 3,472 feet, shot and flowed 12½ bbls. of oil in 24 hours. Magnolia Petroleum Co. No. 1-A Andrews, C E half NE NW section 14-10-6, an old well, deepened from 4,155 feet to 4,171 feet, was acidized and flowed 30 bbls. of oil net in 1 hour through tubing. Amerada Petroleum Corp. No. 1 Yarhola, NE NW NW section 36-10-7, was bottomed at 3,638 feet and produced 7,000,000 feet of gas.

## Okfuskee County

Completions in Okfuskee County included four oil wells, one gas well and two failures. J. H. Chapman No. 3 Cudjo, SE SW SE section 25-10-8, topped Senora sand at 1,717 feet; total depth, 1,752 feet; was shot and flowed 360 bbls. of oil in 24 hours. Sinclair Prairie Oil Co. No. 2 Palmer, SE NE NW section 19-10-9, topped Senora sand at 1,894 feet; total depth, 1,906 feet; was shot and swabbed 32 bbls. of oil in 24 hours. Gulf Oil Corp. No. 4 Cohee, SW NW NW section 31-10-9, was shot and flowed 140 bbls. in 14 hours; top of Senora sand was 1,738 feet; total depth, 1,787 feet. Manahan Oil Co. No. 4 Schlatz, SW NE NW section 31-10-9, had Senora sand at 1,738-59 feet and was bottomed at 1,763 feet. It flowed 15 bbls. of oil in 24 hours.

Hayes & Scruggs No. 1 Durkee, SE SE SW section 21-10-11, had Gilcrease sand at 2,525-85 feet; second sand, 2,625-30 feet; total depth, 2,634 feet; produced 4,000,000 feet of gas.

B. Greenfield and others No. 1-A Rentie, NW NW SE section 24-12-11, topped sand at 1,787 feet but was dry and abandoned at 1,832 feet, total depth. Durkee and others No. 2-A Martin, SE SW NE section 2-10-11, had sand at 1,703-34 feet, total depth, and was dry and abandoned.

First reports of new work in Okfuskee County: Manahan Oil Co. and J. J. Deaner No. 1 Hale, SE cor. section 13-10-8, location. J. A. Chapman

No. 4 Cudjo, SW SW SE section 25-10-8, spudded; same operator's No. 6 Cudjo, NW SE SE section 25-10-8, machine. Manahan Oil Co. No. 1 Black, SE NE SE section 25-10-8, set 10-inch pipe at 41 feet. Ark Royalty Co. No. 3 Palmer, NW SE NE section 19-10-9, cellar and pits. Sinclair Prairie Oil Co. No. 6 Carolina, SW NE SW section 31-10-9, cellar and pits. J. A. Chapman No. 4 King "B," SW NW SW section 30-10-9, set 10-inch casing at 40 feet; same operator's No. 5 King "B," NW NW SW section 30-10-9, set 10-inch casing at 41 feet and drilling plug; Gulf Oil Corp. No. 8 Cohee, NE NW NW section 31-10-9, rigging up rotary. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 3 Carolina, NE SW SW section 31-10-9, set 10-inch casing at 47 feet.

### Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending October 31 and for the preceding week was as follows:

| | Barrels | |
|---|---|---|
| | Oct. 31 | Oct. 24 |
| Allen | 8,250 | 8,450 |
| Burbank | 7,675 | 7,700 |
| South Burbank | 14,500 | 14,750 |
| Balance Osage | 21,750 | 22,000 |
| Blackwell district | 5,575 | 5,300 |
| Bristow-Slick | 8,050 | 8,150 |
| Chandler | 3,900 | 3,875 |
| Crescent | 9,225 | 11,525 |
| Cromwell | 3,400 | 3,525 |
| Cushing-Shamrock | 10,750 | 10,750 |
| Duncan district | 4,025 | 4,050 |
| Edmond | 13,125 | 15,225 |
| Fish | 7,375 | 7,375 |
| Fitts | 69,050 | 68,575 |
| Gray | 1,425 | 1,450 |
| Graham | 4,450 | 4,500 |
| Healdton | 9,425 | 9,350 |
| Hewitt | 4,450 | 4,450 |
| Holdenville | 975 | 1,000 |
| Keokuk | 6,825 | 8,875 |
| Konawa | 1,850 | 1,725 |
| Lucien | 13,175 | 12,650 |
| Marshall-Lovell | 575 | 550 |
| Oklahoma City | 139,750 | 151,200 |
| Olympic | 8,700 | 8,675 |
| Papoose | 975 | 975 |
| Polo | 2,350 | 2,575 |
| Saskawa and townsite | 3,125 | 3,475 |
| Sholem-Alechem | 3,250 | 3,275 |
| Seminole: | | |
| Bowlegs | 11,775 | 11,750 |
| Carr City | 5,925 | 6,275 |
| Earlsboro | 6,875 | 6,875 |
| South Earlsboro | 775 | 750 |
| East Earlsboro | 9,350 | 9,625 |
| Little River | 12,400 | 11,875 |
| East Little River | 1,200 | 1,200 |
| Maud | 850 | 900 |
| Mission | 2,425 | 2,450 |
| Seminole | 9,700 | 9,525 |
| East Seminole | 4,350 | 4,550 |
| Searight | 5,075 | 5,300 |
| Total Seminole | 70,700 | 71,075 |
| St. Louis-Pearson | 23,425 | 25,275 |
| Tatums | 3,250 | 3,225 |
| Tonkawa-Garber-Thomas | 5,500 | 5,525 |
| Wewoka | 4,000 | 3,925 |
| Yale-Jennings | 4,275 | 4,025 |
| Other pools | 65,650 | 67,400 |
| Total Oklahoma | 564,750 | 586,425 |

### Oklahoma County

Continental Oil Co. No. 12 Young, SE SW NW section 31-14-3w, Edmond field, Oklahoma County, flowed 1,818 bbls. of oil in 4 hours after a shot, made potential of 10,907 bbls. and was completed. It topped second Wilcox sand at 6,645 feet; total depth, 6,669 feet.

In the Oklahoma City field, Big Chief Drilling Co. No. 1 Harper-Turner, NE cor. section 34-12-3w, had best pay and Wilcox sand at 6,295 feet; total depth, 6,457 feet. It was shot, flowed 531 bbls. of oil in 3 hours, made potential of 4,213 bbls. and was completed.

New work in Oklahoma County: Helmerich & Payne No. 1 Diamond, SW SW SE section 15-12-3w, an old well, rigging up standard tools to deepen. Hugh Hodges and others No. 1 Fair Park, SW SW NW section 36-12-3w, location. Ohio Oil Co. No. 2 McMillan, NE NW SW section 31-14-3w, digging cellar.

R. Olsen No. 1 Wilson, NE SE NE SW section 22-12-3w, topped second Wilcox sand at 6,394 feet; total depth, 6,485 feet; was shot, flowed 243 bbls. in 3 hours, and made potential of 1,932 bbls. on gas lift, but had not been completed. Ohio Oil Co. No. 3 Dahl, account 2, NW NE SW section 31-14-3w, Edmond, topped Viola lime at 6,435 feet; dense, 6,485 feet; total depth, 6,659 feet, and was preparing to acidize.

### Osage County

Lewis Production Co. No. 8 Calahan, SE NW SW section 23-26-6, South Burbank field, Osage County, had Bartlesville sand at 2,883-2,967 feet, total depth; flowed 473 bbls. of oil naturally in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24 hours; was shot and flowed 908 bbls. in 24 hours, completed.

Continental Oil Co. and Gulf Oil Corp. No. 4 Osage, SW NW SW section 22-24-7, Naval Reserve area, had Bartlesville sand at 2,465-2,561 feet; total depth, 2,565 feet; was shot, flowed 75 bbls. in 17 hours and was completed. Ohio Osage Oil Co. No. 31 Osage, SW cor. section 9-21-9, had a showing of oil in sand at 270-93 feet and was completed as a repressure well.

New work in Osage County: Continental Oil Co. No. 14 Lessert, SW SE SE section 21-24-7, location. Continental Oil Co. and Gulf Oil Corp. No. 5 Mason, SW SW NW section 22-24-7, digging cellar. Lewis Production Co. No. 10 Wilson, NW NE NE section 28-24-7, building rig. Magnolia Petroleum Co. and Empire Oil & Refining Co. No. 5 Bonto, SE SW NW section 23-26-6, digging cellar. Indian Territory Illuminating Oil Co. No. 443 Osage, NE SE SE section 36-26-9, location. Bay Oil Corp. No. 1 Osage, SE SW NW section 25-22-7, an old well, rigging up to deepen.

### Logan County

Continental Oil Co. No. 4 McConnell, NE SW SE section 28-17-4w, Crescent field, Logan County, topped first Wilcox sand at 6,060 feet; second Wilcox sand, 6,184 feet; soft sand, 6,258 feet; total depth, 6,295 feet. It flowed 9,082 bbls. of oil in 4 hours and made potential of 53,966 bbls., completed. Gas gauged 74,000,000 feet.

Three new Logan County tests were reported: Continental Oil Co. No. 5 McConnell, SE SW SE section 28-17-4w, location. Amerada Petroleum Corp. No. 3 Denny, NW SE SE section 33-17-4w, location. Stanolind Oil & Gas Co. and others No. 5 Pfeiffer, C S half S half SW section 33-20-2w, location.

### Lincoln County

Sinclair Prairie Oil Co. No. 3 Hoyt "B," NW NW NE section 5-14-3e, Hoyt pool, Lincoln County, topped Wilcox sand at 5,033 feet; total depth, 5,043 feet; was shot and flowed 245 bbls. of oil in 24 hours, completed.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 1 Hoffman, SE SE SW section 32-15-3, flowed 236 bbls. of oil in 24 hours and was completed at 5,003 feet, total depth. Top of Wilcox sand was 4,990 feet.

New work in Lincoln County: Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Peck, SE SE NW section 35-14-6, Wilcox sand test, cellar. R. L. Kemp and others No. 1 Lindley, NE SE NE section 20-17-5, location; same operator's No. 1 Stites, NW cor. section 28-17-5, moving in rig.

Skelly Oil Co. No. 1 Sporn, NW NE SW section 21-17-3, wildcat near the Payne County line, was bottomed at 4,651 feet. A drill stem test failed and packer was stuck.

### Lucien Field

Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 4 S. Kolb, SW SE NW section 33-20-2w, in the Lucien field, Noble County, had first Wilcox sand at 4,929-62 feet; second sand, 5,020 feet; total depth, 5,098 feet. It swabbed 69 bbls. in 1 hour and made potential of 130 bbls.

### Pottawatomie County

Indian State Oil Co. No. 1 Junk, SW SE SE section 32-11-4, Shawnee pool, Pottawatomie County, topped Earlsboro sand at 4,375 feet; total depth, 4,418 feet; flowed 250 bbls. of oil in 24 hours, with gas estimated at 4,000,000 to 6,000,000 feet, and was completed.

Gulf Oil Corp., Magnolia Petroleum Co. and others No. 2 Vinson, NW SW NE section 13-7-4, St. Louis district, swabbed 714 bbls. of oil in 24 hours from Wilcox sand at 4,149-57 feet, total depth, and was completed.

Tom Phillips and Kimrow Drilling Co. No. 1 Deen, C E half SE NW section 23-11-6, had 1,800 feet of water in the hole and was dry and abandoned at 4,287 feet, total depth.

### Creek County

Completions in Creek County were as follows: Illinois Refining Co. and others No. 1 L. Abraham, NE NW SE section 21-15-8, had Prue sand at 2,410-67 feet; total depth, 2,472 feet; produced 15 bbls. 43 gravity oil. Big Four Petroleum Co. No. 1-A Adams, NE NW NE section 29-17-7, hole full of water at 2,895-99 feet, total depth; dry and abandoned. Sinclair Prairie Oil Co. No. 13 Upton, CEL NE NE section 4-16-12, had Wilcox sand at 2,252-70 feet; total depth, 2,272 feet, and flowed 580 bbls. of oil in 24 hours. Clingensmith and others No. 2-A Gilcrease, CW half SE SE section 33-17-12, had Wilcox sand at 2,271-82 feet, total depth, was shot and swabbed and flowed 125 bbls. in 24 hours. Sinclair Prairie Oil Co. No. 12 Gilcrease, CE quarter SW SE section 33-17-12, flowed 200 bbls. of oil in 24 hours from Wilcox sand at 2,255-75 feet, total depth.

Brady & Son No. 2 Corothers, C N half SE SE section 18-19-9, had initial production of 125 bbls. in 24 hours after shot, in Red Fork sand at 2,326-45 feet, total depth. Commercial Drilling Co. No. 2 Mike, NE NE SW section 17-19-9, twin, had Red Fork sand at 2,345-69 feet, total depth, and produced 35 bbls. of oil in 24 hours. Same operator's No. 3 Mike, NE NE SW section 17-19-9, twin, had Layton sand at 1,173-1,192 feet; total depth, 1,198 feet; was shot and produced 15 bbls. in 24 hours. Same operator's No. 6 Saab, NE NW SW section 17-19-9, produced 25 bbls. of oil in 24 hours from Red Fork sand at 2,325-40 feet, total depth.

Commercial Drilling Co. No. 7 Saab, CWL NW SW section 17-19-9, was drilling at 2,308 feet. Carpenter and others No. 1 Marrs, SE SE NE section 25-18-10, was building rig.

### Okmulgee County

Okmulgee County completions included two gas wells and three failures. W. B. Pine No. 1-A Beams, NE NW SW section 4-15-14, had sand at 1,579-91 feet, total depth, and produced 8,000,000 feet of gas. Lease Investment Co. No. 2 Fewell, SW SW SE section 33-15-11, had sand at 1,250-60 feet; total depth, 1,282 feet, and produced 1,500,000 feet of gas.

J. Wallace No. 1-A Rentie, SW NW SE section 11-14-14, had a hole full of water in sand at 2,390-2,428 feet, total depth, and was abandoned. J. S. Wise No. 1-A Joans, SE NE NW section 5-13-12, had a hole full of water at 1,980 feet, total depth, and was dry and abandoned. Art Thompson No. 1-A Tay Perryman, NW NW SW section 25-12-12, was dry and abandoned at 640 feet, total depth.

J. P. Henthorne No. 1-A Stake, SW SE NE section 13-13-14, the only new work reported in Okmulgee County, was drilling at 500 feet.

### Tulsa County

Tibbens and others No. 1-A Gregory, NE NE SE section 23-18-12, Tulsa County, was dry and abandoned in sand at 1,054-72 feet, total depth.

Two new Tulsa County tests were reported. Johnson Oil & Refining Co. No. 3 Holmes-Bailey, SE NW NE section 31-19-10, was drilling at 1,550 feet. Sand Springs Home and others No. 1-A Adkins, SW SW SE section 31-18-13, had a showing of gas and was testing Dutcher sand at 1,880-92 feet.

### Muskogee County

Joe Paul and others No. 1 T. P. Clouts, C W half SW SW section 13-13-16, had Dutcher sand at 2,293-2,354 feet; water intruded and it was abandoned at 2,357 feet, total depth. It was the only Muskogee County completion.

J. M. Foltz No. 4 P. Bartlett, SW SE NW section 16-14-17, an old well deepening from 1,378 feet, old total depth, was drilling at 1,740 feet.

### Payne County

Twin State Oil Co. No. 3 Myers, SE SW NW section 14-19-5, Yale-Quay district, Payne County, pumped 47 bbls. of oil in 24 hours after a shot and was completed at 2,765 feet, total depth. Gulf Oil Corp. No. 2 George, SE NW NW section 4-19-5, Garr pool, had Bartlesville sand at 3,195-3,260 feet, total depth; shot, pumped 108 bbls. in 17 hours and was completed. Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Eagle, SW cor. section 28-19-5, topped first Wilcox sand at 3,735 feet; second sand, 3,753 feet; total depth, 3,822 feet, and was dry and abandoned.

### Pittsburg County

Mid-Western Oil & Gas Co. No. 2 Court-Shelton, SW SW SE section 7-7-18, in the Quinton gas field, Pittsburg County, had Hartshorne pay at 2,034 feet; drilled to 2,319 feet, plugged back to

*(Continued on Page 78)*

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# Among Gulf Coast Drilling Contractors

Smith & McDannald received contracts for two deep tests in Coastal Louisiana and are rigging up on both tests. On the Cankton Prospect a rig is on location for Superior Oil Producing Co. No. 1 Savoie while to the southeast on the Gecho Prospect in St. Martin Parish No. 1 Hefea Land Co. has been spudded for the Shell Petroleum Corp. Three other active strings of tools are located in this district as follows: One at Hackberry for Superior Oil Producing Co., one at Jennings for Shell Petroleum Corp. and one at the Sorrento dome for Pan American Production Co. Along the Texas Coast a production test is being made in Dickinson field for themselves on the Shelor lease, while to the south in the same field No. 2 Craig for the Pan American Production Co. is drilling below 8,300 feet. Three rigs are located at South Houston for Stanolind Oil & Gas Co., one at Louise for Pure Oil Co. and one at Long Lake for Tide Water Oil Co.

Edwards Drilling Co. marked up a half-mile south extension for the old Sour Lake field in Hardin County when it completed No. 1 Merchant for the Woodley Petroleum Co. and Kirby Oil Co.; No. 1 Howard being drilled for Humble Oil & Refining Co. and others in the Cotton Lake field has been plugged back and is waiting on cement to set after it tested oil and salt water on a drill stem test. In the meantime Coast Petroleum Co. No. 4 Maco Stewart, in the Dickinson field, has been spudded.

Cron & Gracey marked up the deepest drilling record for the Texas Gulf Coast when it drilled Shell Petroleum Co. No. 1 Maco Stewart in Galveston County to a depth of 10,307 feet, where they are fishing for an electrical coring test which was lost when the line broke. In the meantime eight other rigs are located as follows: One at St. Martinsville for Continental Oil Co., one at Roanoke for Shell Petroleum Corp., one at Iowa for the same company, one in Wharton County for the same company, one at West Columbia and Manvel fields for the Texas Co., one at South Houston for Stanolind Oil & Gas Co. and one at West Beaumont for the Texas Co.

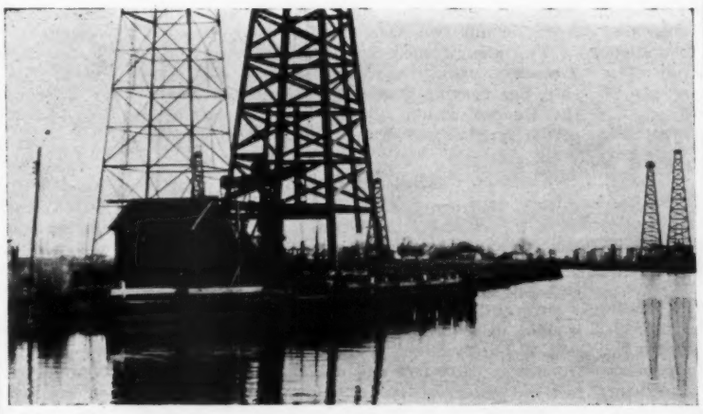
Nicklos Drilling Co. has two wells on the sand at the Tepetate field in Acadia Parish for the Continental Oil Co. No. 1-B Young is bottomed at 8,316 feet with casing cemented on bottom and No. 7-A Homeseekers is bottomed at 8,346 feet. At Port Barre for the Pan American Production Co., No. 2 Garland is bottomed in sand at 3,493 feet and an electrical coring test is being made of the hole.

Rutherford Drilling Co. has three rigs running at the Van Vleck field for the Skelly Oil Co. No. 11-B Cobb was drilled to 7,183 feet and the hole has been plugged back to 6,100 feet. No. 12-B Cobb is drilling in shale at 2,525 feet and No. 13-B Cobb is in shale and shells below 1,380 feet.

Harrison & Dillard, who are drilling No. 1 Candelari at the Green Bayou Prospect in Harris County for Stanolind Oil & Gas Co. encountered the highest pressure ever recorded on any drilling well when the pressure gauge went to 4,900 pounds when the well was shut in after encountering a high-pressure gas sand at 8,101 feet, the total depth. The well is located just out side of the Houston City limits and opens a new field for the district. This same contractor has several rigs running at the hastings field for the same company.

Rowan Drilling Co. received contract for a third well to be drilled in the recently discovered Fairbanks area in Harris County for the Amerada Petroleum Corp. and Stanolind Oil & Gas Co. It is No. 1-A Dopslauf, a south offset to No. 1 Carpenter.

Texas Co. No. 5 Rigolettes Fur Co., Louisiana's second deepest well, is fishing for drill stem which was twisted off while the hole was being reamed, preparatory to running a protection string of casing to a total depth of 10,942 feet. The well had favorable sand at 10,082-96 feet which will be tested if other sands are not encountered below that depth. Two locations were made, No. 6 Lafitte, approximately 1,839 feet east of No. 4 in section 20-17s-24e, and No. 6 Rigolettes about 1,935 feet east of No. 4 in section 29-17s-24e. No. 1 R. C. Milling and others in section 20-17s-24e, is drilling in sandy lime below 5,958 feet.



*In old part of the East Hackberry field, Cameron Parish, Coastal Louisiana, showing canal through the heart of the field*

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# Michigan Field Report

# BUSY DAYS AHEAD IN FIELD; NEW ISABELLA COUNTY POOL

By
**PAUL A. ELLIOTT**

MUSKEGON, Mich., Nov. 2.—Though the record of 14 completions showed a majority of dry holes last week in Michigan, one of the two successful new oil wells opened a new field in Sherman Township, Isabella County, one of four new gassers was the largest completed recently in the Tri-Townships field and general optimism prevailed throughout the state because of a succession of showings in new areas.

In fact, Michigan today is more thoroughly aroused to future oil and gas possibilities throughout the state than ever before in the history of its petroleum industry.

From east to west and north to south, not only in the Lower but also in the Upper Peninsula, wildcats are attracting widespread interest as Michigan anticipates a boom unparalleled since the Saginaw field was opened in 1925.

New discoveries in and near older fields as well as shows in a score of rank wildcat areas during recent weeks have whetted the appetite of Michigan operators for new fields confidently expected to turn the tide of declining crude production and increase the production and marketing of additional supplies of natural gas.

Deeper formations in which commercial production has not yet been developed, such as the Trenton, St. Peters and Clinton are being probed with hopes of success. Issuance of new permits continue to mount toward an all-time record.

### New Field

Recognized the most important wildcat development since the discovery of the Crystal field in Crystal and Ferris Townships, Montcalm County, Pure Oil Co. last week developed initial production of 454 bbls. a day from the Dundee in its wildcat test on the J. W. Embrey lease, NW NW SW section 34-15n-6w, Sherman Township, Isabella County.

Located on the north edge of the Broomfield Township, Isabella County gas field, the Embrey well flowed about 15 bbls. an hour by heads after striking Dundee pay sands at 3,606 feet. It was later deepened 5 feet to 3,611 feet where production increased to about 20 bbls. an hour.

Pure Transportation Co. immediately laid about a mile and a quarter of 4-inch line from the well to the Pere Marquette Railroad where crude is being moved by rail.

Three miles north of the successful wildcat, Mountain Oil and Gas and Dapar Oil Companies were drilling below 1,100 feet in the No. 1 Jack Thompson, SE SE NE section 17, same township, while Snyder Drilling Co. has started deepening the No. 1 Fritz, a former half million foot Michigan Stray gasser, to the Dundee for oil at a depth of more than 2,200 feet.

### Vernon Keeps Up

Chartiers Oil Co. No. 1 William Currie, C S SW SW section 5-16n-4w, the Vernon Township wildcat which previously aroused new interest in Isabella County, continued producing about 800 bbls. daily against more than 400 pounds back pressure. Dundee was topped at 3,902 feet and the hole drilled to 3,927 feet.

Pure Transportation Co. completed a 3-mile extension of its Vernon pipe line system to pick up the crude, replacing motor truck service to the Sweet Oil Co. refinery at Wyman. A south offset already has been started on the Archibald lease in an attempt to locate the possible south boundary before the operators start probing to the northwest, believed trend of the field. The Currie test shows no water, one of the great dangers in Isabella County.

Another small Dundee producer was brought in in Isabella County when the Chartiers Co. completed the No. 1 Fitzpatrick Estate, C W SE NW section 12-15n-4w, Isabella Township, for 15 to 20 bbls. natural initial at 3,714 feet, or 59 feet in the limestone topped at 3,655 feet. It was to be treated with acid.

Sixteen other tests were active in six Isabella Townships indicating the recent revival of activity in this area, one of the first to be developed in the vicinity of Mt. Pleasant.

### Wildcat Showings

One of the new developments of the past week added a 1,000,000-foot gasser in Home Township, Montcalm County. Scheduled for a deep test, the Fletcher & Leman No. 1 Fred DePoy, C NE NE section 13-12n-6w, struck Michigan Stray gas in this quantity at 1,259 feet.

Same operators, however, completed a dry hole in No. 1 H. P. Alspaugh, C SW SE section 19-12n-5w, Richland Township, drilling to 1,156 feet on a location about half way between the new DePoy well and a test by the McClanahan Oil Co., which unexpectedly struck about 5,000,000 feet of gas in the Michigan Stray.

### Beaverton Increased

Acid treatment of two wells previously drilled into the Dundee pay sands in two smaller central Michigan fields resulted in the development of outstanding production of crude for these fields.

M. F. Whitehill added nearly 1,000 bbls. of production to the Beaverton Township, Gladwin County pool, by increasing the flow of his No. 1 Mark King well, section 2-17n-2w, to 750 bbls. daily after acid treatment, and finishing the No. 2 King, SE SW NW same section, for 300 bbls. daily from the Dundee topped at 3,821 and drilled to 3,890 feet.

Gordon Oil Co. also struck a show in the Dundee in No. 1-B Havens, SE SE SW section 25-18n-1w, Buckeye Township, topping the Dundee at 3,492 feet and drilling to 3,620 feet where the test was being cleaned out after a shot of nitroglycerin. The hole filled up about 1,400 feet with oil before the shot. It is one location west of the Oard discovery well in the township.

After settling for several days, the two King wells continued to produce about 500 bbls. daily, the best output in the Beaverton field where Gordon Oil immediately started rigging for a third King test. M. F. Whitehill is starting a No. 3 Welker and two other locations have been made.

Two other tests have been started in Buckeye Township, while two were drilling in Hay Township, one nearing Traverse and expected to reach the Dundee within a week with formations reported running higher than in the Oard discovery well.

### Midland County

Guy M. Obernauer, Trustee, struck a show of about 2 bbls. a day in the No. 1 Rowland, NE SW NW section 19-15n-2w, Geneva Township, Midland County, topping the Dundee limestone at 3,625 feet and drilling to 3,660 feet.

Braden and Saunders likewise drilled into the Dundee in the No. 5 Stapleton, NE NW NE section 13-14n-2w, Greendale Township, topping the Dundee at 3,514 feet and drilling 11 feet to 3,525 feet on the east edge of the township.

Pyramid Oil & Mineral Development Co. were treating the Dundee in the No. 1 Wayne test, SW SW SW section 9-13n-1w, Porter Township, topping the limestone at 3,405 feet and drilling to 3,430 feet filling up several hundred feet overnight.

### Ogemaw Surprise

W. J. Bernier struck a surprise 200-bbl. daily initial in his No. 1 Izqorski, NE SE SW section 14-22n-1e, Ogemaw Township and county, extending the field several locations north, and he has moved in to rig up a second test on the same lease. Mr. Bernier also has taken over another test on the Weiler lease, NE SE SW section 14, same township, shut down at about 1,800 feet for some time and will complete it with W. E. Ross under a new concern known as Ross & Bernier, Inc. The corporation also plans to move in soon within a mile of the Izqorski lease for a 5,000-foot project to test a large block of acreage north and west of present development.

Emmett J. Kelly, Trustee, developed 35 bbls. initial in No. 1 Meir, NW SW NW section 27-22n-2e, West Branch Township, Ogemaw County.

### Crystal-Montcalm

Located half a mile north of the A.B.T. Trustee No. 1 Strait well, which two weeks ago extended the Crystal-Montcalm field about half a mile westward, R. E. Gallagher No. 1 Allison, SE SE NW section 34-11n-5w, Ferris Township, last week filled up 1,500 feet in 7 hours indicating a further extension.

Max Pray completed No. 1 Strait, SW NW NW section 3-10n-5w, Crystal Township, same field, as a duster drilling into water at 3,208 feet after topping Dundee limestone at 3,199 feet. It was plugged back to 3,206 feet and treated but failed to develop commercial production from a show at this point.

### Arenac County

T. F. Caldwell, Inc., successfully saved a flow of 1,000,000 feet daily of Berea gas by plugging back the No. 1 Mutch well, NE SE SE section 17-19n-4e, Deep River Township, Arenac County wildcat, after failure for oil in the Dundee. It was plugged back from 2,885 feet to about 1,800 feet after shows at 494 feet and 1,500 feet on the way to Traverse lime at 1,956 feet and Dundee at 2,765 feet. Gas will be used for drilling further wildcats in the vicinity.

Tamblyn and Martindale plugged and abandoned their No. 1 Buffalo Land Co. test, SE NE NE section 7-19n-3e, Adams Township, Arenac County, at 3,063 feet.

McClanahan Oil Co. was nearing Dundee in the No. 1 C. W. Seignious well, SE SW SE section 3-20n-4e, Clayton Township, same county, while same company's No. 1 Mee, NE SE SW section 11, same township, was nearing Traverse. Two other tests have been started in Arenac and Deep River Townships.

### Gratiot County

Max Pray continued trying to develop first commercial oil production in Gratiot County in No. 1 Wittig, SE SE SE section 23-11n-1w, Lafayette Township wildcat, but had succeeded in producing only 4 bbls. a day from the Dundee after heavy acid treatment. Water was encountered at 3,213 feet and the hole plugged back and shot at 3,190 feet before acidizing for a show at 3,199 feet.

Disappointment greeted the Wiser Oil Co. in No. 3 S. S. Smith, C SE NE section 10-10n-4w, New Haven Township, Gratiot County, which drilled into water after passing through a show of less than 5,000 feet of Michigan Stray gas. A mile south American Production Co. was nearing

(Continued on Page 95)

# BRIDGEPORT DRILL COLLARS

**ANY SIZE, ANY LENGTH**
obtainable without delay from Louisana, Texas, New Mexico, Oklahoma and Kansas stocks.

Every one perfectly bored, correctly balanced, and positively guaranteed against any defects.

**GENERAL SPECIFICATIONS**

| O. D. Dia. | Length | Bore | D. P. Used With | Approx. Wt. |
|---|---|---|---|---|
| 4⅞" | 20'<br>24'<br>30' | 1⅞" | 3½" | 831 lbs.<br>1,022 lbs.<br>1,308 lbs. |
| 6¼" | 20'<br>24'<br>30'<br>40'*<br>50' | 2 13/16" | 4½" | 1,375 lbs.<br>1,708 lbs.<br>2,203 lbs.<br>3,039 lbs.<br>3,870 lbs. |
| 7" | 20'<br>24'<br>30'<br>40'*<br>50'* | 3 13/16" | 5 1/16" | 1,662 lbs.<br>2,035 lbs.<br>2,595 lbs.<br>3,528 lbs.<br>5,561 lbs. |
| 8" | 20'<br>24'<br>30'<br>40'*<br>50' | 4½" | 6⅝" | 2,108 lbs.<br>2,576 lbs.<br>3,277 lbs.<br>4,445 lbs.<br>5,613 lbs. |
| 9" | 20'<br>24'<br>30'<br>40'*<br>50'* | 4½" | 6⅝" | 2,638 lbs.<br>3,278 lbs.<br>4,261 lbs.<br>5,883 lbs.<br>7,505 lbs. |

* Furnished on order from mill.

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SAE 3140 Forged Chrome Nickel Steel—Uniformly and completely heat-treated from end to end.

SAE 1040 Forged Carbon Steel—Fully normalized.

(Steel Thread or Bronzed Lined Friction Boxes.)

*Guaranteed*
*Competitive Prices*

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**MACHINE COMPANY**
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OIL DRILLING-FISHING AND PRODUCTION EQUIPMENT
GENERAL OFFICE AND WORKS: WICHITA, KANSAS

**HOUSTON . DALLAS . SAN ANTONIO . SHREVEPORT . ODESSA . TULSA**
**OKLAHOMA CITY . WICHITA . NEW YORK CITY . AND BRANCH STORES**

# TOUGH!

The sergeant is tough. He has to be. He has a tough job. And because he handles his job well he can put chevrons on his sleeve. That's the Army's reward for long and worthy service.

●

LAY-SET Preformed must earn its "chevrons" in the form of automatic re-orders. *It does.*

GREEN SIGNIFIES SAFETY

LAY-SET Preformed Rotary Lines are tough. They have to be. They have a tough job. They have to run at high speeds, yet spool perfectly. They do. They mustn't twist in the sheaves and wear themselves out prematurely. They don't. They must resist kinking. They do. They must lend themselves to quick stringing. They do. Each strand must carry its full share of the load. It does. They have to give long and worthy service. *They do.*

**HAZARD WIRE ROPE COMPANY**

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**LAY·SET *Preformed* Rotary Lines**

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T. R. INGRAM

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The Byrd-Frost, Inc. and Magnolia Petroleum Co. test on the Hyannis structure in Grant County, Nebraska, hit the granite at 4,036 feet and was abandoned.

## NEW MEXICO

Texas Co. No. 3 State-Aggies, NE cor. section 20-20-37e, was the largest producer of four wells completed in the Monument district of southeastern New Mexico. It flowed 1,344 bbls. of oil naturally through three-fourths inch choke on tubing. Gas gauged 1,425,000 feet daily. It was bottomed at 3,857 feet, in lime pay topped at 3,698 feet.

. Anderson & Prichard Oil Corp. No. 2 Britt "A," C NE SW section 6-20-37, had oil pay at 3,800-90 feet, total depth; set packer at 3,799 feet and flowed 120 bbls. of oil naturally through three-fourths inch choke in 24 hours. Gas volume was 1,500,000 feet. Gulf Oil Corp. No. 1 Kutter, C SW SE section 20-19-37, was acidized and shot, afterward flowing 123 bbls. of oil through tubing in 24 hours. It had pay at 3,860-4,007 feet, total depth. Gulf Oil Corp. No. 1 Kutter "B," C SW SW section 21-19-37, topped pay at 3,895 feet; total depth, 3,985 feet in pay. After acidizing it flowed 264 bbls. of oil through three-fourths inch tubing choke.

The largest of four completions in the Eunice field was Gulf Oil Corp. No. 1 Sunshine, C SW SW section 30-20-37. It flowed 840 bbls. of oil through tubing after acidizing with 2,000 gallons. Gas volume was 1,404,000 feet. It had pay at 3,735-3,838 feet, total depth. Humble Oil & Refining Co. No. 6 Knox, C NE SE section 10-21-36, had pay at 3,794-3,890 feet, total depth, was acidized and flowed 672 bbls. of oil through tubing in 24 hours. Repollo Oil Co. No. 2 Houston, section 7-21-36, was bottomed in lime pay at 3,885 feet. It flowed 566 bbls. of oil naturally in 16 hours through three-fourths inch choke on tubing. Shell Petroleum Corp. No. 1 State "K," C NE NE section 36-20-36, topped pay at 3,770 feet, drilled in to 3,850 feet, total depth, and flowed 312 bbls. of oil naturally. Gas gauged 1,400,000 feet.

### Roosevelt County

The Clovis Corp.'s test of the Claudell structure in the SE NE section 17-2s-30e will be drilled with standard tools and contract has been let to Huey & Cyper, Borger, Tex. They are moving in. Contract calls for spudding not later than November 11. The location is 1½ miles to the northwest of the Claudell Development Co. No. 1 Wilmes, C SW SE section 21-2s-30, in which a discovery was made last year in the San Andreas lime, but which could not be saved on account of the condition of the hole. The lime was topped at 3,300 feet. Sulfur water was encountered at 3,325-48 feet and the hole was carrying a column of 2,700 feet of water when it entered the lime pay topped at 3,345 feet and bottomed at 3,367 feet. The quantity of oil was sufficient to cut the entire column of water notwithstanding a back pressure of nearly a thousand pounds. Later, when preparations were under way to plug the hole, the fluid was bailed down to 1,800 feet off bottom and the well headed up and made a number of flows. It was impossible to save the well and it was abandoned. The new location, based on geophysical work of Claudell brothers and checked by Dr. W. P. Jenny, of Houston, is apparently 100 feet higher than No. 1 Wilmes.

### Monument Area

Texas Co. No. 3 State-Aggies, NE cor. sec. 20-20-37. T.D. 3,857 ft.; tubing to test.
Gulf Oil Corp. No. 8 Graham-State, C NW SE sec. 25-19-36. Drlg. 2,920 ft.
Amerada Pet. Corp. No. 4 Andrews, sec. 12-20-36. Drlg. 3,885 ft.
Amerada Pet. Corp. No. 1 Theo. Anderson, sec. 8-20-37. Drlg. 2,995 ft.
Empire Oil & Ref. Co. No. 1-F State, sec. 30-20-37. Drlg. 3,750 ft.
Gulf Prod. Co. No. 1 Whitmore, sec. 8-20-37. T.D. 3,882 ft.; swabbing.
Gulf Oil Corp. No. 2 Kutter-State "B," C SW NW sec. 38-19-37. Drlg. 2,005 ft.
Gulf Oil Corp. No. 2 Williams, C SW SE sec. 29-19-37. Drlg. 2,790 ft.
Gulf Oil Corp. No. 3-B Culp, C SE SE sec. 31-19-37. Drlg. 3,215 ft.
Atlantic Pet. Corp. No. 1 Crutchfield, C NE SE sec. 32-19-37. Drlg. 2,167 ft.
Empire Oil & Ref. Co. No. 2 Laughlin, C SW SE sec. 5-20-37. Drlg. 3,590 ft.
Ohio Oil Co. No. 4 Barber, C NE SW sec. 5-20-37. Drlg. 3,723 ft.
Ohio Oil Co. No. 5 Barber, C NW NW sec. 5-20-37. Drlg. 3,308 ft.
Tide Water Oil Co. No. 2 Anderson, C NE SE sec. 8-20-37. Drlg. 3,370 ft.
Skelly Oil Co. No. 2 State "F," C SW SE sec. 17-20-37. Cellar and pits.
Amerada Pet. Corp. No. 5 State "T," C SW NE sec. 20-19-37. Drlg. 3,190 ft.
Sun Oil Co. No. 1 Laughlin, C NW SW sec. 4-20-37. T.D. 2,518 ft.; set 9⅝-in. csg.
Sun Oil Co. No. 2 Laughlin, C NE SE sec. 5-20-37. Drlg. 2,618 ft.
Phillips Pet. Co. and Anderson-Prichard Oil Corp. No. 1 Hobbs, C NE SW sec. 18-20-37. T.D. 595 ft.; S.D.
Texas Co. No. 4 Mattern, C NE SW sec. 20-19-37. T.D. 125 ft.; set 12½-in. csg.
Gulf Oil Corp. No. 2 Love, C SE SE sec. 32-19-37. Drlg. 925 ft.
Shell Pet. Corp. No. 3 Cooper "B," C SW NW sec. 4-20-37. T.D. 1,258 ft.; set 9⅝-in. csg.
Amerada Pet. Corp. No. 1 Adkins, C SW SW sec. 5-20-37. Drlg. 1,910 ft.
Texas Co. No. 3 Cooper, C SW NE sec. 5-20-37. Drlg. 1,052 ft.
Continental Oil Co. No. 5-A-3 Reed, SE SW NE sec. 3-20-36. Cellar and pits.
Humble O. & R. Co. No. 1 State "D," C SE NE sec. 20-19-37. Rig.
Texas Co. No. 2 Cooper, C NE NE sec. 5-20-37. R.U.R.
Continental Oil Co. No. 1 Britt "A," C NE NW sec. 18-20-37. T.D. 300 ft.; set 10¾-in. csg.
Amerada Pet. Corp. No. 7 Weir, C SW SE sec. 26-19-36. R.U.R.
Continental Oil Co. No. 1 State "A," C SW SW sec. 26-19-36. Moving in.
Continental Oil Co. No. 1 Sanderson "A," C E half NE NE sec. 10-20-36. Loc.
Continental Oil Co. No. 2 Sanderson "A," C N half NW SE sec. 11-20-36. Loc.
Amerada Pet. Corp. No. 7 State "T," C NW SW sec 28-19-37. Cellar and pits.
Amerada Pet. Corp. No. 5 Andrews, C SW NW sec. 12-20-36. Cellar and pits.
Gulf Oil Corp. No. 1 Theo. Anderson, C SW SE sec. 8-20-37. Bldg. rig.
Stanolind O. & G. Co. No. 1 Gilluly, C SW SW sec. 8-20-37. Loc.
Shell Pet. Corp. No. 2 Cooper "B," C NW NW sec. 4-20-37. T.D. 1,230 ft.; set 9⅝-in. csg.

### Eunice Area

Continental Oil Co. No. 5-B-14 Lockhart, C NW SW sec. 14-21-36. Rig.
Continental Oil Co. No. 4-D-15 State, C SW SE sec. 15-21-36. T.D. 303 ft.; set 10¾-in. csg.
Continental Oil Co. No. 5-D-15 State, C SW NE sec. 15-21-36. Bldg. rig.
Humble O. & R. Co. No. 2 State-Aggies, C SW SE sec. 31-20-37. Drlg. 3,447 ft.
Continental Oil Co. No. 16-B-4 Meyer, C SE SE sec. 4-21-36. Drlg. 3,004 ft.
Shell Pet. Corp. No. 2 State "F," C SW NW sec. 6-21-36. Drlg. 1,658 ft.
Humble O. & R. Co. No. 7 Adkins, C SE NW sec. 10-21-36. Drlg. 1,344 ft.
Gulf Oil Corp. No. 3 Janda "C," C SE SW sec. 15-21-36. Drlg. 1,465 ft.
Shell Pet. Corp. No. 2 State "A," NE cor. sec. 12-21-25. T.D. 217 ft.; set 12½-in. csg.
Gulf Oil Corp. No. 11 Arnott-Ramsey "C," C NE NE sec. 21-21-36. Drlg. 3,796 ft.
Jim Murray et al No. 3 Wallace, C SE NW sec. 3-21-36. T.D. 3,875 ft.; flowed 5 bbls. per hour on 24-hour test after acid.
Gulf Oil Corp. No. 2 Orcutt "C," C NE NE sec. 6-21-36. Drlg. 2,578 ft.
Continental Oil Co. No. 4-B-14 Lockhart, sec. 14-21-36. Drlg. 3,175 ft.
Continental Oil Co. No. 3-B-18 Meyer, sec. 18-21-36. Drlg. 3,824 ft.
Gulf Prod. Co. No. 1-D Bell-State, sec. 6-21-36. T.D. 3,775 ft.; set 5½-in. csg.
Gulf Prod. Co. No. 1-E Bell-State, sec. 11-21-36. Drlg. 3,635 ft.
Gulf Prod. Co. No. 3 Harry Leonard, sec. 22-21-36. Drlg. 3,260 ft.
Sun Oil Co. No. 3 Akens, sec. 3-21-36. Drlg. 3,561 ft.
Gulf Oil Corp. No. 6 Orcutt, C SW NE sec. 6-21-36. Drlg. 3,204 ft.
Atlantic Oil Prod. Co. No. 3 State "L," C SW NW sec. 6-21-36. Drlg. 3,005 ft.
Texas Pacific Coal & Oil Co. No. 2 State "A," Acct. 2, C NW SW sec. 5-22-36. Drlg. 3,769 ft.
Humble O. & R. Co. No. 6 State-Aggies, C SW NE sec. 31-20-37. Cellar and pits.
Gulf Oil Corp. No. 1 L. White, C SE SE sec. 25-20-36. Cellar and pits.
Gulf Oil Corp. No. 2 Bell-State "D," C SW SW sec. 6-21-36. Loc.
Continental Oil Co. No. 6-D-15 State, C NE SE sec. 15-21-36. Bldg. rig.
Texas Co. No. 4 State-Aggies, C NW SE sec. 31-20-37. T.D. 3,740 ft.; W.O.C.
Sun Oil Co. No. 4 Akens, C NE SW sec. 3-21-36. Drlg. 3,633 ft.

### Sims Area

Devonian Oil Co. No. 1 Christmas, NE NE SE sec. 28-22-37. Bldg. rig.
Skelly Oil Co. No. 1 R. R. Simms "C," C SE SW sec. 3-23-37. R.U. spudder.
Skelly Oil Co. No. 1 H. O. Simms "D," C SE NW sec. 3-23-37. Drlg. 745 ft.
Skelly Oil Co. No. 1 W. P. Simms "B," C NW NE sec. 10-23-27. T.D. 138 ft.; set 15½-in. csg.
Empire O. & R. Co. No. 1 Walden, C SE NW sec. 21-22-37. Drlg. 1,500 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 1,305 ft.; waiting on tools.
Continental Oil Co. No. 1-A-15 Elliott, SE SE SE sec. 15-22-37. T.D. 3,556 ft.; shot; headed 15 bbls. in 24 hrs.; drlg. by tools.
Samedan Oil Co. No. 1 Hughes, C NE SW sec. 4-23-37. T.D. 3,648 ft.; swabbed 64 bbls. in 24 hrs.; preparing to pump.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. Drlg. 1,150 ft.
Amon G. Carter No. 1 E. M. Elliott, sec. 22-22-37. Loc.
J. E. Farrell No. 1 Walden "C," sec. 15-22-37. T.D. 1,169 ft.; standardizing.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 90 ft.; S.D.
Repollo Oil Co. No. 2 Ollie Boyd, sec. 23-22-37. Cellar and pits.
Skelly Oil Co. No. 1 G. W. Sims, sec. 10-23-37. Drlg. 3,500 ft.
Skelly Oil Co. No. 1 W. P. Sims, sec. 10-23-37. Drlg. 3,535 ft.
Skelly Oil Co. No. 2 R. R. Simms, C NE SW sec. 3-23-37. Cellar and pits.

### Cooper Area

Southern Cil Corp. No. 1 Gates, C SW NW sec. 23-24-36. T.D. 3,514 ft.; acidized; flowed 30 bbls. fluid from below packer at 3,500 ft.

### Lea County—Miscellaneous

Continental Oil Co. No. 1 J. C. Farney "A," C SW SE sec. 5-23-36. Wildcat; rig.
Plains Prod. Co. No. 3 J. A. E. Knight, C SE SE sec. 21-24-37. Rigging up standard tools.
Shell Pet. Corp. No. 1 J. F. Black, C NW SE sec. 21-24-37. T.D. 702 ft.; S.D.
Plains Prod. Co. No. 4 Knight, C SW SW sec. 22-24-37. Cellar and pits.
Eppenauer Drlg. Co. No. 1 Stuart, NE NW NE sec. 22-25-37. Spudded and S.D.
Landreth Prod. Co. No. 1 J. W. Grizzell, C SE SW sec. 5-22-37. T.D. 3,780 ft.; flowed 20 bbls. of oil per day, 160 bbls. water.
Rowan et al No. 1 Mattern, C SW SE sec. 8-22-37. T.D. 3,789 ft.; drlg. plug.
C. & G. Oil Co. No. 1 E. Weir, C NE NE sec. 14-20-37. T.D. 4,075 ft.; P.B. 4,074 ft.; S.D.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. T.D. 2,526 ft.; S.D.
Argo Royalty Co. No. 1 Lanehart, SW SE NE sec. 21-26-37. Drlg. 3,565 ft.
Magnolia Pet. Co. No. 2 O. E. Carson, C NW NW sec. 33-21-37. T.D. 3,786 ft.; cleaning out; flowed 75 bbls. in 8 hrs.
Stanolind O. & G. Co. No. 1 Langley, sec. 15-25-37. T.D. 3,413 ft.; bridged after shot; fishing.
Emperor Oil Co. No. 1 State, C SW SW sec. 5-21-36. Drlg. 3,385 ft.

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## NEW MEXICO

Texas Co. No. 3 State-Aggies, NE cor. section 20-20-37e, was the largest producer of four wells completed in the Monument district of southeastern New Mexico. It flowed 1,344 bbls. of oil naturally through three-fourths inch choke on tubing. Gas gauged 1,425,000 feet daily. It was bottomed at 3,857 feet, in lime pay topped at 3,698 feet.

. Anderson & Prichard Oil Corp. No. 2 Britt "A," C NE SW section 6-20-37, had oil pay at 3,800-90 feet, total depth; set packer at 3,799 feet and flowed 120 bbls. of oil naturally through three-fourths inch choke in 24 hours. Gas volume was 1,500,000 feet. Gulf Oil Corp. No. 1 Kutter, C SW SE section 20-19-37, was acidized and shot, afterward flowing 123 bbls. of oil through tubing in 24 hours. It had pay at 3,860-4,007 feet, total depth. Gulf Oil Corp. No. 1 Kutter "B," C SW SW section 21-19-37, topped pay at 3,895 feet; total depth, 3,985 feet in pay. After acidizing it flowed 264 bbls. of oil through three-fourths inch tubing choke.

The largest of four completions in the Eunice field was Gulf Oil Corp. No. 1 Sunshine, C SW SW section 30-20-37. It flowed 840 bbls. of oil through tubing after acidizing with 2,000 gallons. Gas volume was 1,404,000 feet. It had pay at 3,735-3,838 feet, total depth. Humble Oil & Refining Co. No. 6 Knox, C NE SE section 10-21-36, had pay at 3,794-3,890 feet, total depth, was acidized and flowed 672 bbls. of oil through tubing in 24 hours. Repollo Oil Co. No. 2 Houston, section 7-21-36, was bottomed in lime pay at 3,885 feet. It flowed 566 bbls. of oil naturally in 16 hours through three-fourths inch choke on tubing. Shell Petroleum Corp. No. 1 State "K," C NE NE section 36-20-36, topped pay at 3,770 feet, drilled in to 3,850 feet, total depth, and flowed 312 bbls. of oil naturally. Gas gauged 1,400,000 feet.

### Roosevelt County

The Clovis Corp.'s test of the Claudell structure in the SE NE section 17-2s-30e will be drilled with standard tools and contract has been let to Huey & Cyper, Borger, Tex. They are moving in. Contract calls for spudding not later than November 11. The location is 1½ miles to the northwest of the Claudell Development Co. No. 1 Wilmes, C SW SE section 21-2s-30, in which a discovery was made last year in the San Andreas lime, but which could not be saved on account of the condition of the hole. The lime was topped at 3,300 feet. Sulfur water was encountered at 3,325-48 feet and the hole was carrying a column of 2,700 feet of water when it entered the lime pay topped at 3,345 feet and bottomed at 3,367 feet. The quantity of oil was sufficient to cut the entire column of water notwithstanding a back pressure of nearly a thousand pounds. Later, when preparations were under way to plug the hole, the fluid was bailed down to 1,800 feet off bottom and the well headed up and made a number of flows. It was impossible to save the well and it was abandoned. The new location, based on geophysical work of Claudell brothers and checked by Dr. W. P. Jenny, of Houston, is apparently 100 feet higher than No. 1 Wilmes.

### Monument Area

Texas Co. No. 3 State-Aggies, NE cor. sec. 20-20-37. T.D. 3,857 ft.; tubing to test.
Gulf Oil Corp. No. 8 Graham-State, C NW SE sec. 25-19-36. Drlg. 2,920 ft.
Amerada Pet. Corp. No. 4 Andrews, sec. 12-20-36. Drlg. 3,885 ft.
Amerada Pet. Corp. No. 1 Theo. Anderson, sec. 8-20-37. Drlg. 2,995 ft.
Empire Oil & Ref. Co. No. 1-F State, sec. 30-20-37. Drlg. 3,750 ft.
Gulf Prod. Co. No. 1 Whitmore, sec. 8-20-37. T.D. 3,882 ft.; swabbing.
Gulf Oil Corp. No. 2 Kutter-State "B," C SW NW sec. 38-19-37. Drlg. 2,005 ft.
Gulf Oil Corp. No. 2 Williams, C SW SE sec. 29-19-37. Drlg. 2,790 ft.
Gulf Oil Corp. No. 3-B Culp, C SE SE sec. 31-19-37. Drlg. 3,215 ft.
Atlantic Pet. Corp. No. 1 Crutchfield, C NE SE sec. 32-19-37. Drlg. 2,167 ft.
Empire Oil & Ref. Co. No. 2 Laughlin, C SW SE sec. 5-20-37. Drlg. 3,590 ft.
Ohio Oil Co. No. 4 Barber, C NE SW sec. 5-20-37. Drlg. 3,723 ft.
Ohio Oil Co. No. 5 Barber, C NW NW sec. 5-20-37. Drlg. 3,308 ft.
Tide Water Oil Co. No. 2 Anderson, C NE SE sec. 8-20-37. Drlg. 3,370 ft.
Skelly Oil Co. No. 2 State "F," C SW SE sec. 17-20-37. Cellar and pits.
Amerada Pet. Corp. No. 5 State "T," C SW NE sec. 20-19-37. Drlg. 3,190 ft.
Sun Oil Co. No. 1 Laughlin, C NW SW sec. 4-20-37. T.D. 2,518 ft.; set 9⅝-in. csg.
Sun Oil Co. No. 2 Laughlin, C NE SE sec. 5-20-37. Drlg. 2,618 ft.
Phillips Pet. Co. and Anderson-Prichard Oil Corp. No. 1 Hobbs, C NE SW sec. 18-20-37. T.D. 595 ft.; S.D.
Texas Co. No. 4 Mattern, C NE SW sec. 20-19-37. T.D. 125 ft.; set 12½-in. csg.
Gulf Oil Corp. No. 2 Love, C SE SE sec. 32-19-37. Drlg. 925 ft.
Shell Pet. Corp. No. 3 Cooper "B," C SW NW sec. 4-20-37. T.D. 1,258 ft.; set 9⅝-in. csg.
Amerada Pet. Corp. No. 1 Adkins, C SW SW sec. 5-20-37. Drlg. 1,910 ft.
Texas Co. No. 3 Cooper, C SW NE sec. 5-20-37. Drlg. 1,052 ft.
Continental Oil Co. No. 5-A-3 Reed, SE SW NE sec. 3-20-36. Cellar and pits.
Humble O. & R. Co. No. 1 State "D," C SE NE sec. 20-19-37. Rig.
Texas Co. No. 2 Cooper, C NE NE sec. 5-20-37. R.U.R.
Continental Oil Co. No. 1 Britt "A," C NE NW sec. 18-20-37. T.D. 300 ft.; set 10¾-in. csg.
Amerada Pet. Corp. No. 7 Weir, C SW SE sec. 26-19-36. R.U.R.
Continental Oil Co. No. 1 State "A," C SW SW sec. 26-19-36. Moving in.
Continental Oil Co. No. 1 Sanderson "A," C E half NE NE sec. 10-20-36. Loc.
Continental Oil Co. No. 2 Sanderson "A," C N half NW SE sec. 11-20-36. Loc.
Amerada Pet. Corp. No. 7 State "T," C NW SW sec 28-19-37. Cellar and pits.
Amerada Pet. Corp. No. 5 Andrews, C SW NW sec. 12-20-36. Cellar and pits.
Gulf Oil Corp. No. 1 Theo. Anderson, C SW SE sec. 8-20-37. Bldg. rig.
Stanolind O. & G. Co. No. 1 Gillully, C SW SW sec. 8-20-37. Loc.
Shell Pet. Corp. No. 2 Cooper "B," C NW NW sec. 4-20-37. T.D. 1,230 ft.; set 9⅝-in. csg.

### Eunice Area

Continental Oil Co. No. 5-B-14 Lockhart, C NW SW sec. 14-21-36. Rig.
Continental Oil Co. No. 4-D-15 State, C SW SE sec. 15-21-36. T.D. 303 ft.; set 10¾-in. csg.
Continental Oil Co. No. 5-D-15 State, C SW NE sec. 15-21-36. Bldg. rig.
Humble O. & R. Co. No. 2 State-Aggies, C SW SE sec. 31-20-37. Drlg. 3,447 ft.
Continental Oil Co. No. 16-B-4 Meyer, C SE SE sec. 4-21-36. Drlg. 3,004 ft.
Shell Pet. Corp. No. 2 State "F," C SW NW sec. 6-21-36. Drlg. 1,658 ft.
Humble O. & R. Co. No. 7 Adkins, C SE NW sec. 10-21-36. Drlg. 1,344 ft.
Gulf Oil Corp. No. 3 Janda "C," C SE SW sec. 15-21-36. Drlg. 1,465 ft.
Shell Pet. Corp. No. 2 State "A," NE cor. sec. 12-21-25. T.D. 217 ft.; set 12½-in. csg.
Gulf Oil Corp. No. 11 Arnott-Ramsey "C," C NE NE sec. 21-21-36. Drlg. 3,796 ft.
Jim Murray et al No. 3 Wallace, C SE NW sec. 3-21-36. T.D. 3,875 ft.; flowed 5 bbls. per hour on 24-hour test after acid.
Gulf Oil Corp. No. 2 Orcutt "C," C NE NE sec. 6-21-36. Drlg. 2,578 ft.
Continental Oil Co. No. 4-B-14 Lockhart, sec. 14-21-36. Drlg. 3,175 ft.
Continental Oil Co. No. 3-B-18 Meyer, sec. 18-21-36. Drlg. 3,824 ft.
Gulf Prod. Co. No. 1-D Bell-State, sec. 6-21-36. T.D. 3,775 ft.; set 5½-in. csg.
Gulf Prod. Co. No. 1-E Bell-State, sec. 11-21-36. Drlg. 3,635 ft.
Gulf Prod. Co. No. 3 Harry Leonard, sec. 22-21-36. Drlg. 3,260 ft.
Sun Oil Co. No. 3 Akens, sec. 3-21-36. Drlg. 3,561 ft.
Gulf Oil Corp. No. 6 Orcutt, C SW NE sec. 6-21-36. Drlg. 3,204 ft.
Atlantic Oil Prod. Co. No. 3 State "L" C SW NW sec. 6-21-36. Drlg. 3,005 ft.
Texas Pacific Coal & Oil Co. No. 2 State "A," Acct. 2, C NW SW sec. 5-22-36. Drlg. 3,769 ft.
Humble O. & R. Co. No. 6 State-Aggies, C SW NE sec. 31-20-37. Cellar and pits.
Gulf Oil Corp. No. 1 L. White, C SE SE sec. 25-20-36. Cellar and pits.
Gulf Oil Corp. No. 2 Bell-State "D," C SW SW sec. 6-21-36. Loc.
Continental Oil Co. No. 6-D-15 State, C NE SE sec. 15-21-36. Bldg. rig.
Texas Co. No. 4 State-Aggies, C NW SE sec. 31-20-37. T.D. 3,740 ft.; W.O.C.
Sun Oil Co. No. 4 Akens, C NE SW sec. 3-21-36. Drlg. 3,633 ft.

### Sims Area

Devonian Oil Co. No. 1 Christmas, NE NE SE sec. 28-22-37. Bldg. rig.
Skelly Oil Co. No. 1 R. R. Simms "C," C SE SW sec. 3-23-37. R.U. spudder.
Skelly Oil Co. No. 1 H. O. Simms "D," C SE NW sec. 3-23-37. Drlg. 745 ft.
Skelly Oil Co. No. 1 W. P. Simms "B," C NW NE sec. 10-23-27. T.D. 138 ft.; set 15½-in. csg.
Empire O. & R. Co. No. 1 Walden, C SE NW sec. 21-22-37. Drlg. 1,500 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. T.D. 1,305 ft.; waiting on tools.
Continental Oil Co. No. 1-A-15 Elliott, SE SE SE sec. 15-22-37. T.D. 3,556 ft.; shot; headed 15 bbls. in 24 hrs.; drlg. by tools.
Samedan Oil Co. No. 1 Hughes, C NE SW sec. 4-23-37. T.D. 3,648 ft.; swabbed 64 bbls. in 24 hrs.; preparing to pump.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. Drlg. 1,150 ft.
Amon G. Carter No. 1 E. M. Elliott, sec. 22-22-37. Loc.
J. E. Farrell No. 1 Walden "C," sec. 15-22-37. T.D. 1,169 ft.; standardizing.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 90 ft.; S.D.
Repollo Oil Co. No. 2 Ollie Boyd, sec. 23-22-37. Cellar and pits.
Skelly Oil Co. No. 1 G. W. Sims, sec. 10-23-37. Drlg. 3,500 ft.
Skelly Oil Co. No. 1 W. P. Sims, sec. 10-23-37. Drlg. 3,535 ft.
Skelly Oil Co. No. 2 R. R. Simms, C NE SW sec. 3-23-37. Cellar and pits.

### Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-36. T.D. 3,514 ft.; acidized; flowed 30 bbls. fluid from below packer at 3,500 ft.

### Lea County—Miscellaneous

Continental Oil Co. No. 1 J. C. Farney "A," C SW SE sec. 5-23-36. Wildcat; rig.
Plains Prod. Co. No. 3 J. A. E. Knight, C SE SE sec. 21-24-37. Rigging up standard tools.
Shell Pet. Corp. No. 1 J. F. Black, C NW SE sec. 21-24-37. T.D. 702 ft.; S.D.
Plains Prod. Co. No. 4 Knight, C SW SW sec. 22-24-37. Cellar and pits.
Eppenauer Drlg. Co. No. 1 Stuart, NE NW NE sec. 22-25-37. Spudded and S.D.
Landreth Prod. Co. No. 1 J. W. Grizzell, C SE SW sec. 5-22-37. T.D. 3,780 ft.; flowed 20 bbls. of oil per day, 160 bbls. water.
Rowan et al No. 1 Mattern, C SW SE sec. 8-22-37. T.D. 3,789 ft.; drlg. plug.
C. & G. Oil Co. No. 1 E. Weir, C NE NE sec. 14-20-37. T.D. 4,075 ft.; P.B. 4,074 ft.; S.D.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. T.D. 2,526 ft.; S.D.
Argo Royalty Co. No. 1 Lanehart, SW SE NE sec. 21-26-37. Drlg. 3,565 ft.
Magnolia Pet. Co. No. 2 O. E. Carson, C NW NW sec. 33-21-37. T.D. 3,786 ft.; cleaning out; flowed 75 bbls. in 8 hrs.
Stanolind O. & G. Co. No. 1 Langley, sec. 15-25-37. T.D. 3,413 ft.; bridged after shot; fishing.
Emperor Oil Co. No. 1 State, C SW SW sec. 5-21-36. Drlg. 3,385 ft.

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Leonard No. 3 Lanehart, C NE NW sec. 21-25-37. Moving in material.
C. L. Carlock et al No. 1 Quincy-Ricker, C SE SE sec. 7-16-36. Wildcat; drlg. 229 ft.
J. C. Clower No. 1 Turner, C SE SE sec. 29-21-37. T.D. 3,485 ft.; fishing.
Culberson-Irwin & Stovall No. 2 Stuart, NW SE SE sec. 10-25-37. Drlg. 3,100 ft.
Samedan Oil Co. No. 2 Hughes, C NW SE sec. 4-23-37. Moving in material.
Continental Oil Co. No. 1-A-24 Sholes, C SE SE sec. 24-25-36. Drlg. 2,685 ft.
Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; T.D. 1,060 ft.; S.D. for orders.
Baldridge and others No. 1 Blakely, C NW NE sec. 5-20-38. Wildcat; T.D. 1,645 ft.; S.D.
Rushwold Oil Co. No. 1 Carter, C NW NE sec. 30-20-39. Wildcat; T.D. 40 ft.; R.U.S.T.
Plains Prod. Co. No. 2 J. A. Knight, C NW SW sec. 22-24-37. T.D. 1,377 ft.; set 7⅝-in. csg.
Empire O. & R. Co. No. 1 S. Dabbs, C NW NW sec. 23-25-37. Drlg. 2,470 ft.
Skelly Oil Co. No. 1-A Stuart, SW NE NE NW sec. 15-25-37. Drlg. 2,800 ft.
Texas Co. No. 2 Sheppard "A," C SW NW sec. 6-26-37. Drlg. 1,671 ft.
Maxwell, Crandall & Osmond No. 1 Lane-State, C SW NW sec. 32-10-34. Wildcat; drlg. 1,882 ft.
Getty Oil Co. No. 1 Hardy, C SE SE sec. 20-21-37. R.U.R.
Maljamar O. & G. Co. No. 7 Baish, C SE NW sec. 21-17-32. Drlg. 450 ft.
Continental Oil Co. No. 1 Rex William "A," C SW SW sec. 27-23-35. Wildcat; rig.
Texas Co. No. 1 Young, SE cor. sec. 5-24-37. T.D. 3,025 ft.; fishing.
Texas Co. No. 1 Black, C SW NW sec. 21-24-37. Drlg. 1,005 ft.
Magnolia Pet. Co. No. 3 Carson, C SW SW sec. 28-21-37. Cellar and pits.
Continental Oil Co. No. 1 Eaves "B," C SW NE sec. 30-26-37. M.I.M.
Tide Water Oil Co. No. 1 Coates "B," C NW NW sec. 21-25-37. Drlg. 2,815 ft.
Talbot-Mullineaux No. 1 Quincy-Ricker, C SE SE sec. 7-16-36. Wildcat; drlg. 1,235 ft.

### Eddy County

Clint Murchison and others No. 1 State "A," C NE SW sec. 16-17-31. Rigging up machine.
Barnsdall Oil Co. No. 4 Dodd, C SE SE sec. 22-17-29. Drlg. at 1,005 ft.
Fred Brainard No. 1 Berry, C E½ NW NW sec. 23-17-27. R.U. machine.
Tignor-Etz & Keys No. 5 Keya "A," C E½ SW SW sec. 10-17-28. Drlg. 270 ft.
Etz Bros. No. 3 State, sec. 16-17-30. Drlg. 2,953 ft.
Hammond et al No. 1 State, SW SE SW sec. 15-27-28. T.D. 1,903 ft.; S.D.
Republic Prod. Co. No. 6 Russell, SW NE NW sec. 18-17-31. Drlg. 3,382 ft.
Flynn, Welch & Yates No. 74 State, C S½ NE SW sec. 27-18-28. T.D. 2,826 ft.; C.O.; est. 23 bbls. daily.
D. & B. Oil Co. No. 2 Berry, NW SE NW sec. 21-17-30. T.D. 3,400 ft.; testing.
William Dooley No. 1 Hatchett, NE SW NE sec. 11-20-26. Wildcat; T.D. 803 ft.; P.B. to 445 ft.; testing.

### Harding County

Kahay No. 1 Dae Daca, C sec. 19-20n-31e. T.D. 1,702 ft.; S.D.
Clyde B. Neill No. 1 Foster, C NW SW sec. 27-21-30. S.D. 700 ft.

### De Baca County

Mid-Continent Engineering Corp. No. 1 State, C NW SE sec. 27-4n-22e. T.D. 1,051 ft. in broken lime; S.D.

### McKinley County

Claude Walker No. 2 fee, sec. 20-20n-9w. Drlg. at 100 ft.
Dave Stacey No. 1 Tee, C NW sec. 28-20-9w. Drlg. 90 ft.

### Roosevelt County

Maxwell, Crandall & Osmond No. 1 Williamson, C NW NW sec. 7-8s-36e. Wildcat; bldg. rig.
Claudel Development Co. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Wildcat; location.
Wirt Franklin and Flynn, Welch & Yates No. 1 Catts, C NW NW sec. 28-3n-30e. Drlg. 1,765 ft.

### Union County

Superior Oil Corp. and Olson Drlg. Co. No. 1 J. H. Zurich, SE SW sec. 2-21-34e. T.D. 2,925 ft.; in granite; S.D.

## NORTHWEST NEW MEXICO

### Bernalillo County

Norine Realty Co., Inc., No. 2 Gallegas grant, SE NW NW sec. 19-11n-4e. T.D. 2,450 ft., hd. gr. sd.; rng. 2,000 ft. of 8¼-in.

### Guadalupe County

Anton Chico Dev. Co. No. 2 fee, NW NE SW sec. 20-9n-17e. Abd. 804 ft.; bad hole; may drill another loc.

### McKinley County

Al Gibbons No. 2 fee, NW SW NE sec. 28-20n-9w. Drlg. sh. 425 ft.
Dave Stacey No. 1 Patd., C NW sec. 28-20n-9w. Drlg. 90 ft. (first report).
Foster & Clark No. 2 fee, NW NE NE sec. 29-20n-6w. Drlg. 485 ft.
S. Bouton, SEL NW NE sec. 4-14n-10w. S.D. 1,490 ft.
Wm. Forth No. 5 fee, NW NW NE sec. 29-20n-9w. T.D. 445 ft. in sh.; W.O. csg.

### San Juan County

R. R. Burke No. 2 Govt., NW NW NE sec. 18-21n-13w. Drlg. 297 ft. sh.; 10¾-in. at 30 ft.; wtr. at 230 ft.
Continental Oil Co. No. 58 Tribal, SW SE SE sec. 35-30n-19w. Drlg. 395 ft. (first report).
Kutz Canon O. & G. Co. No. 1 Day, SW SW SW sec. 20-28n-10w. T.D. 4,400 ft.; will P.B. to Picture Cliff sd.
Angel Peak Oil Co. No. 7 Govt., Lot 2, sec. 11-28-11w. Drlg. 780 ft.; carrying 6⅝-in.
Jack Amenda No. 4 Hart, NW NE SW sec. 25-30n-12w. Drlg. 1,365 ft.

### San Miguel County

Cabra Springs O. & G. Co. No. 1 Cabra Springs ranch, SW NE NE sec. 22-12n-22e. T.D. 4,120 ft.; U.R. 6⅝-in. to bottom.
S. W. Pressey et al No. 1 Faulkner, NE NE NE sec. 25-17n-16e. Resuming at 5,082 ft.; (formerly Star-Kennedy No. 3 Adams).

### Torrance County

48 Pet. Co. No. 1 Greenfield, C NW SW sec. 17-9n-8e. Drlg. 2,100 ft.

## COLORADO

### Adams County

Oklahoma Oil Co. No. 1 Baxter, C SW sec. 2-3s-66. S.D. 4,368 ft. for 4-in. D.P.
Glenridge Oil Corp. No. 1 Hills, SE SE SE sec. 27-3s-64w. T.D. 4,267 ft.; rebldg. rig and W.O. 6¼-in.

### Archuleta County

The William E. Hughes Estate No. 13 Gramps, at an undesignated location in the Gramps (Price) pool, topped the pay sand in the Dakota at an undisclosed depth and will core all horizons down to the top of the Morrison. This is the second well to be carried down to the Morrison. The estate's No. 10 Gramps cut eight sands in the Dakota section all of which carried oil in commercial quantities. The first and second Dakotas were estimated at 778 bbls. per day based on a swabbing test. This production was cased off. The sands below the casing point were estimated at 708 bbls. per day. The estate has changed its plans regarding construction of pipe line from the field to Chama, N. Mex., on account of favorable conditions and will begin construction work at once instead of waiting until spring. Contract was let to J. H. Gates, of Denver, for 15½ miles of 4½-inch O.D. pipe and equipment is now of the ground.

One new operation was reported in the Cortez Oil Co. No. 1-A Crowley, which is southwest of the Hughes operation and is on the Chromo dome according to some of the maps.

Cortez Oil Co. No. 1-A Crowley, 600 ft. N of S line and 200 ft. E of W line, NE NE sec. 2-32n-2e. R.U. to go to 2,250 ft.; start in 15½-in. hole with cable tools (first report).
Maryott Drlg. Co. No. 1 Hollywood, SE SE SE sec. 15-34n-1w. S.D. 625 ft.
Oil City Pet. Co. No. 1-A Garrett, NW NE NW sec. 25-33n-2e. S.D. after P.B. from 1,515 ft. to O.S. at 970 ft.
Oil City Pet. Co. and Archuleta O. & G. Co No 1 Reeder, Lot 50 (SW SE SW) sec. 24-33n-2e. S.D. 1,183 ft.
H. L. Kendrick No. 1 Crowley (unsurveyed), sec. 2-32-1. S.D. 1,167 ft.
Sharp et al No. 1 Walcott, C S½ SE sec. 34-33n-2e. Drlg. below 200 ft.

### Baca County

Paul R. Robb Pet. Corp. No. 1 Lovette, NW NW NW sec. 24-32s-48. S.D. 2,790 ft.

### Boulder County

Boulder Prod. Dev. Co. No. 2 Maxwell, NW NW NE sec. 24-1n-71. Drlg. 2,325 ft.

### Huerfano County

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69. O.W.D.D.; drlg. 3,150 ft.; S.G.; object Dakota at 3,900 ft.

### Jackson County

Colorado Oil Ref. Co. No. 1 North Park Coal Co., NW NW sec. 18-9n-78w. S.D. 2,700 ft.

### LaPlata County

Detroit Oil Association No. 1, NW SW sec. 9-35n-12w. Drlg. 3,170 ft.
McGarr Pet. Co. No. 1 Pinon Mesa Land Co., CSL NE NE sec. 34-33n-12w. Cmtd. 6¾-in. at 3,450 ft.; D.D. to 3,680 ft.; S.D.

### Larimer County

Continental Oil Co. No. 8 Buckeye-U.P., C NE SW sec. 1-10s-68. T.D. 4,992 ft.; P.B. to 4,524 ft.; rng. 6⅝-in. to test.

### Las Animas County

Garcia Corp. No. 1 McClung, NE NW SE sec. 19-33s-61. Loc.; getting titles in shape.

### Lincoln County

Consolidated Smelting & Metals Co. No. 1 Hancock, NE NE SW sec. 7-17s-62. S.D. 2,096 ft.

### Moffat County

Mountain Fuel Supply Co. No. 1 Allen, NE SW SE sec. 32-12n-97w. Cg. 4,834 ft.
Mountain Fuel Supply Co. No. 1 Kuykendall, NE NE SE sec. 22-12n-100. Drlg. 2,764 ft.
Morapas Pet. Co. No. 1 Cole, C SW SE sec. 1-3n-92. Rig up; bldg. winter camp.

### Morgan County

Swisher et al No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line, sec. 3-4n-60. T.D. 1,718 ft.

### Montezuma County

McElmo Oil Co. No. 1 West, NE NW NE sec. 21-26n-17w. S.D. 3,960 ft.

### Park County

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 1,920 ft.; 10-in. at 1,907 ft.
South Park Oil Co. No. 1 LeBert, NE NE NW sec. 21-11n-75w. S.D. 705 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. Drlg. 5,240 ft. in sh.; 4½-in. at 5,200 ft.

### Pueblo County

The Phillips Petroleum Co. released a location this week for a test to be drilled near the town of Henkel, 25 miles north of Pueblo and 18 miles south of Colorado Springs in its No. 1 Andover-Century, NE SW NW section 26-18s-65. It will go to the top of the red beds expected at about 2,300 feet and will be drilled with a large core drill capable of going 3,000 feet. The location is 7 miles east and north of the Columbine Oil Co. test in section 34-18s-66, in the Wild Horse Park district, which was drilled to 3,600 feet in 1920. It had water at 1,630 and 2,833 feet; a small show of oil and gas at 2,600 feet and a show of oil at 2,735-37 feet. It also is 3 to 4 miles north of two wells drilled in 1918 and 1925. One of these, the Zenith well in NW NE section 11-19-65, had the Dakota at 1,240 feet and the other, the Isenberg well in section 2-19-65, was abandoned at 2,008 feet with the bit 8 feet in a water sand which had a show of oil.

Phillips Pet. Co. No. 1 Andover-Century, NE SW NW sec. 26-18s-65. M.I.M. (first report).

### Routt County

Mid-Colo Pet. Co. No. 1 Omoholt, NE SE SE sec. 29-4n-87w. S.D. 2,910 ft.; renewing leases before drlg. into Sundance.

### Washington County

I.T.I.O.-Carter-Foster Minerals Corp. No. 1 Vorce, C NE NE sec. 28-1s-49. Drlg. 6,862 ft.

### Weld County

Continental Oil Co. No. 2 Briggs, C NE SW sec. 13-6n-61. T.D. 6,704 ft.; testing.

## WYOMING

### Albany County

California Co. No. 4 Hoist, SE sec. 13-17n-77. Cg. at 3,422 ft.
Hal Blakeman No. 1 Chapple, C NE NW sec. 31-21-76. Drlg. 1,589 ft.
California Co. No. 1 Bath, NW NW SW sec. 4-16n-75. Stdg. cmtd. at 300 ft.

### Big Horn County

Stock Oil Co. No. 1 Allen, Lot 52, sec. 32-56n-97. T.D. 3,825 ft.; on fire; pmpg. in wtr.
Stock Oil Co. No. 1-B Allen, Lot 52, sec. 32-56n-97. Drlg. 460 ft.; 13⅜-in. cmtd. 235 ft.; 250 sacks.
Ohio Oil Co. No. 1 Wiley, C NE NW sec. 25-56n-97. Drlg. 2,714 ft.
Ohio Oil Co. No. 2 Smith, CWL NE SE sec. 32-56-97. T.D. 3,882 ft.; redrlg. 3,127 ft.
Ohio Oil Co. No. 2 State, NE cor. Lot 38, sec. 36-46n-97. R.U.
Taylor Oil Co. No. 1 Robinson, SW SW NW sec. 24-56n-97. Drlg. 2,050 ft.
Peay Oil Co. No. 1 Denio Hr., 43-C, sec. 15-55n-87w. Drlg. 3,885 ft.; 6⅝-in. at 3,840 ft.
Stock Oil Co. No. 1 Griffin, Lot 60, sec. 4-55n-97. Drlg. 3,518 ft. in r.b.
Peter Evanoff et al No. 1 McAllister, NW NE SE sec. 9-55n-87. Drlg. 2,968 ft.

### Carbon County

Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78. Drlg. 1,710 ft.
General Pet. Corp. No. 1 Union Pacific, SW NW sec. 19-83w. Drlg. 4,815 ft. near top Dakota.
Ohio Oil Co. No. 1 Hatfield, NE SE NW sec. 2-19n-83. Recmtg. pipe at 2,000 ft. before testing Dakota at 3,933-50 ft.
Ohio Oil Co. No. 11 Harrison & Cooper, NE SW SW sec. 35-20n-78. Drlg. 2,880 ft. in sh.

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**ARKANSAS PORTLAND CEMENT CO.**
WALLACE BLDG. LITTLE ROCK, ARK.

Sinclair-Wyoming Oil Co. No. 10 Govt., SW SE NW sec. 7-26-89w. Drlg. 5,320 ft.

**Converse County**

Chadron-Osage Oil Co. No. 1 State, SW SW sec. 16-32n-69w. S.D. 3,050 ft.; may install rotary.
Wyoming Southern Oil Co. No. 1 Salisbury, NW NW SE sec. 27-32n-69. Drlg. 321 ft.

**Campbell County**

G. J. Shearin et al No. 1 Rhodes, NE SE SW sec. 24-49n-74. S.D. 191 ft.

**Fremont County**

C. E. Nelson No. 2 Enos, SW NE SW sec. 27-3n-1w. Drlg. 326 ft.
Tropic Oil Co. No. 1 Govt., C SE SW sec. 34-27n-90w. Drlg. 2,890 ft.
Sinclair-Wyoming Oil Co. No. 2-C Muskrat, NE SW SW sec. 1-23n-92w. T.D. 7,293 ft.; test delayed by snow storm and muddy roads.

**Goshen County**

Ohio Oil Co. No. 1 Waggoner, C NE NE sec. 14-26n-63w. Drlg. 935 ft.

**Hot Springs County**

Empire State Oil Co. No. 1 Larson, sec. 33-44n-93. S.D. 1,610 ft.; top of Frontier 1,575 ft.; dry.

**Laramie County**

Amerada Pet. Corp. No. 1 Morton, C SW SW sec. 13-13n-68. Drlg. 6,600 ft. sdy. sh.

**Lincoln County**

Place Oil Co. No. 36, SE sec. 9-26n-113. Spd. and set 1 jt. of 15½-in. and S.D.; W.O. approval of bond.
Senrab Oil Corp. No. 2 Govt., CSL SE NW sec. 10-26n-113w. S.D. 1,020 ft.

## Niobrara County

Lance Creek had one completion, one near completion and one new location.

The Argo Oil Co. No. 5 Elliott, C NW NW section 5-35n-65, was completed at 3,831 feet in the top of the red beds for 1,200 bbls. of oil and 14,000,000 feet of gas the first 24 hours in the basal Sundance at 3,749-3,813 feet. Same company's No. 8 Elliott, C NW SE section 5-35-65, is building derrick. Elevation, 4,426 feet.

The Continental Oil Co. No. 2-B Schuricht is a near completion and is coring at 4,032 feet. It had fine gray sand at 3,983-4,005 feet; black lime at 4,005-13 feet; limey sand at 4,013-23 feet; no recovery at 4,023-28 feet; hard black dry sand at 4,028-32 feet.


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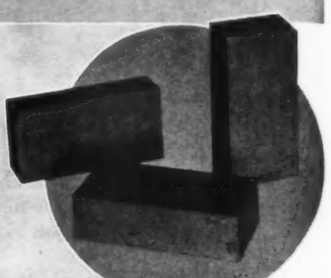

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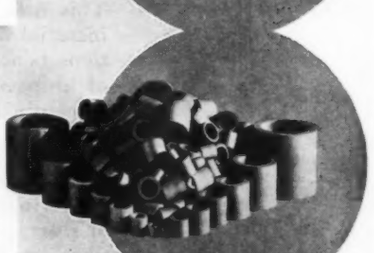

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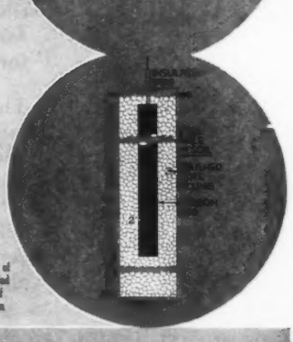

Illustration of recommended method of installation

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Argo Oil Co. No. 8 Elliott, C NW SE sec. 5-35n-65. Bldg. drk. (first report).
Bay-Elwell No. 1 Joss, CSL SE NW sec. 1-34-66w. Spdg.
Continental Oil Co. No. 2 Schuricht, SE SW SE sec. 6-35n-65. Cg. 4,032 ft.
Continental Oil Co. No. 2-A Dielman, NW NE NE sec. 7-35n-65. R.U.R.
Adams Louisiana Co.-Bay-Elwell No. 1 Spaugh, C NW NE sec. 18-35n-65. Drlg. 3,585 ft.
Holly Dev. Co. No. 1 Novick, NE SE SW sec. 6-35n-65. Drlg. 3,400 ft.; top Dakota 3,300 ft.; lower 22 ft. heavily sat.
Lewis Gokel No. 1, NE SE NW sec. 31-35n-62w. Drlg. 970 ft.
J. M. Huber Corp. No. 2 Joss, NE NE SW sec. 6-35n-65. Cmtd. 12½-in. at 250 ft.; W.O.C.
Ohio Oil Co. No. 6 Putnam, C NW NW sec. 4-35n-65w. Drlg. 1,603 ft. sh. and shells.
Ohio Oil Co. No. 4 Rohlff, C SW NE sec. 32-36n-65w. Drlg. 1,624 ft. sh. and shells; 10-in. at 202 ft.; 155 sacks.
Riggs Oil Co. No. 2 Spaugh, SE SW SW sec. 32-34n-65w. T.D. 350 ft.; fsg. (loc. cor.).
Chester Oil Co. No. 1 fee, NE NE NE sec. 14-39n-61. T.D. 940 ft.; U.R. at 906 ft.

**Park County**

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. Drlg. 1,470 ft.
Resolute Oil Co. No. 1 State, C NW SW sec. 16-57-101w. Drlg. 8,240 ft.

**Platte County**

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. Drlg. 610 ft.

**Sublet County**

California Pet. Corp. No. 4-C, SW cor. sec. 34-27n-113w. Drlg. 645 ft. gr. sh.
Progressive Oil Co. No. 1 Haddenham, SE NW NW sec. 21-28n-113w. S.D. 385 ft.; rig moved away.

**Sheridan County**

Beaver Creek Oil Co. No. 1 Allison, SW SE sec. 15-55-85. Drlg. 3,200 ft.

**Sweetwater County**

Mountain Fuel Supply Co. No. 1 Cooper, C NW SE sec. 15-16n-104. R.U.R.

**Uinta County**

Bridger Basin Oil Co. No. 1-B, NW NW SW sec. 10-14n-118. T.D. 1,850 ft.; making W.S.O.
W. D. Marshall No. 1 Govt., NW SW SE sec. 12-15n-118. Drlg. 1,419 ft.

**Washakie County**

Wyoming O. & R. Co. No. 4 Govt., NW NW NW sec. 31-48-90. T.D. 1,524 ft.; cmtd. 6¼-in. on top of sd. at 1,522 ft.; W.O.C.
Nystrom & Smoot No. 3 State, NE NE NE sec. 36-48-91. Drlg. 1,190 ft.
Yale Oil Corp. No. 1 Govt., SE SE SE sec. 25-48-91. Wtr. sd. 1,490-95 ft.; 8¼-in. cmtd. 1,588 ft.; oil sd. 1,660-67 ft.; W.O.C.
Arlton & Doyle No. 1 Govt., SW SW SE sec. 29-48-91. S.D. 1,132 ft. for wire line.
Woods-Callahan Oil Co., Ltd., No. 1 Keye, SE SE NW sec. 25-48n-91. M.I.M.
Bruce C. Teeters No. 4 Govt., NW SW NW sec. 31-48n-90w. Drlg. 150 ft.
Calhoun & Jefferies No. 1 Govt., SW NW SW sec. 30-48n-90w. Drlg. 1,900 ft.
Christensen & Thorne No. 3 Govt., NW SW SW sec. 31-48n-90w. Spdg. 168 ft.

**Weston County**

Charles Stough No. 4, CWL SW NW sec. 4-46n-63. Drlg. 300 ft.
H. D. Wiltse No. 10 NE NW NE sec. 17-46-63. R.O.G.
John Brophy No. 1 Lemke, SE SE NE sec. 10-48n-65w. Drlg. 637 ft.
Conway Oil Corp. No. 1 Govt., C SE NW sec. 7-41n-60w. T.D. 2,700 ft.; P.B. to 2,345 ft. to S.O. bottom wtr.; W.O.C.

# MONTANA

**Big Horn County**

Daniels Pet. Co. No. 1 May, C SE SE sec. 13-1s-33e. T.D. 3,580 ft. (cor.); W.O. rotary.
E. A. Lammers & Son No. 1 Berhold, SW SW NW sec. 1-1s-32e. Drlg. 739 ft.

**Cascade County**

C. Leonard Smith No. 1 Smith-Schwingle, NE NE SW sec. 14-22n-2e. Saved as wtr. well at 210 ft.; skidded rig 25 ft. north.

**Carbon County**

East Bridge O. & G. Co. No. 1, CSL SE SE sec. 23-6s-23e. Drlg. 967 ft.
Ohio Oil Co. No. 1 Northern Pacific, SE NE SW sec. 11-7s-21. T.D. 5,549 ft.; changing back to rotary to D.D.
Henderson Producing Co. No. 1-H-11 Elk, 11, SE SE NW sec. 35-9s-23e. Drlg. 486 ft.
Round Butte O. & G. Co. No. 2, CWL NE SE sec. 3-8s-23e. Drlg. 456 ft. in Colo. sh.

**Fallon County**

Montana-Dakota Utilities Co. No. 1 Smith, Unit 8, C SE NW sec. 8-4n-62e. Drlg. 1,175 ft. sh.
Montana-Dakota Utilities Co. No. 1 Warren, Unit 5, C SW sec. 23-8n-59e. T.D. 1,532 ft.; rmg. 9-in. hole at 980 ft.; spd. 10-23.

**Fergus County**

Minnesota Co. No. 1 Fenholt, SE NW SW sec. 24-21n-18e. S.D. 1,100 ft.; tools still in hole.
Judith Operating Co. No. 2 Govt., NW NE sec. 5-22n-17e. Drlg. 3,072 ft.
Kalispel-Kevin Oil Co. No. 2 Emmons, C SW SE sec. 26-2s-18e. S.D. 496 ft.; C.D.
Emmons et al No. 3, SE NE NE sec. 6-21n-18e. Drlg. 716 ft.

## Glacier County

Recent developments in the southern part of the Cut Bank field, taken in connection with wildcatting in Pondera County to the southeast of Cut Bank, is causing speculation as to whether the old shore line from which the production comes does not trend in a different direction from that heretofore believed to be the trend. This week the Montana Power Gas Co. No. 1 Berger, in section

*(Continued on Page 90)*

# Texas and Louisiana Gulf

# LOCKRIDGE GAS FIELD MAY BECOME A MAJOR OIL POOL

By
F. L. SINGLETON

HOUSTON, Tex., Nov. 2.—The blowout of a deep wildcat on the Greens Bayou Prospect, just outside of the Houston city limits, Harris County, and the prospects of opening the first commercial oil production at the Lockridge gas field in north central Brazoria County were the featured developments along the Gulf Coast the past week.

Stanolind Oil & Gas Co. apparently marked up its sixth straight strike for the district when its No. 1 Candelari located in the Reels and Trobough Survey blew out while coring at 8,101 feet and ran wild for several hours before it was brought under control. The well came in making dry gas, but late in the week its flow had turned to distillate and seemed to be getting darker in color. After the well was shut in, the pressure on the casing registered 4,900 pounds which is the highest ever recorded. The company is trying to bleed off some of the gas through two flow lines from the tubing and unless the excessive pressure shows a decline, the well will be completed without setting screen and liner. After the well was opened through the two flow lines, the pressure remained at 3,900 pounds.

It is the opinion of the operators that the well is producing through a crevice possibly from a 10,000-foot horizon and not from its present depth, since practically no drilling fluid was blown into the air while the well was wild. This theory is substantiated by the fact that no producing sands at this depth have ever recorded such tremendous pressure.

### A New Oil Field

The Lockridge Prospect, north central Brazoria County, proven for distillate production two months ago by the completion of Gulf Oil Corp. No. 1 J. E. Fairfield, has apparently been proven an oil field of major importance due to the favorable showings made by the same company's No. 2 Wilkes and Smith located about a mile south of the discovery well in the John W. Hall Survey. The hole is bottomed in the Frio sand at 6,392 feet and casing is expected to be cemented for a production test after a 15-minute drill stem test from 6,340-67 feet tested 110 pounds of pressure and 4,000 feet of 38 gravity oil with no water through quarter-inch choke on top and three-quarters inch choke on bottom of the testing tool. Three previous drill stem tests made at intervals from 6,245-6,324 feet showed for distillate production.

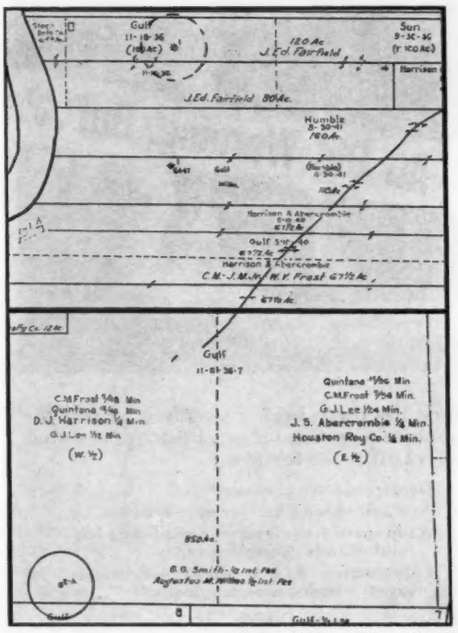
This is the third test drilled on this prospect by Gulf. The first test, No. 1 Wilkes and Smith, was abandoned at 6,647 feet and the discovery well to the north was completed through perforations from 6,264-6,725 feet after the hole had been plugged back from a total depth of 8,698 feet.

A half-mile south extension to the old Sour Lake field, Hardin County, was opened by the completion of Kirby Petroleum Co. and Woodley Petroleum Co. No. 1 Merchant, which flowed 60 bbls. of pipe line oil in 12 hours through a quarter-inch choke with tubing pressure 240 pounds and casing pressure 620 pounds. The well tested salt water last week and the hole was plugged back and perforated at 4,504-68 feet with 10 shots. To the northwest at the Batson field John Deering and others No. 4 Cruse, a flank test located in the F. H. Green Survey, topped oil sand at 5,490 feet and is bottomed at 5,506 feet with 7-inch casing cemented at 5,489 feet.

### Hastings Extended

W. L. Goldson's No. 1 fee located 1,000 feet northeast of production at the Hastings field, Brazoria County, was completed for an initial production of 598 bbls. per day through a quarter-inch choke with tubing pressure 600 pounds and casing pressure 850 pounds. Production is coming through perforated casing from 6,104-22 feet. This is the first producer to be completed in the field by an independent operator and opens considerable acreage for development The well was purposely drilled to the salt water sand at 6,163 feet and is producing from a plugged back depth of 6,133 feet. Same operator has made location for No. 2 fee located 330 feet from the southeast line and midway between the northeast and southwest lines of a 22.41-acre tract in the B.B.B.&C. Survey.

On an official gauge made of Steinberger Petroleum Co. No. 1 Drushel located in the F. Rodriquez Survey, Edna gas field, Victoria County, flowed 1,800,000 feet of gas and 15 bbls. of distillate per day through a five-thirty-seconds inch




—W. W. Zingery, Maps, Houston.

***Plat of the Lockridge Prospect, Brazoria County, showing location of Gulf Oil Corp. No. 2-A Wilkes and Smith which tested 4,000 feet of pipe line oil on a drill stem test from 6,340-67 feet. The discovery well, a distillate producer, is located to the north***

choke with working pressure 1,850 pounds and casing pressure 1,900 pounds. The well is producing through perforated casing from 4,640-50 feet.

Texas Crusader Oil Co. No. 1 H. C. Cockburn, the discovery well of the Magnet area, Wharton County, pulled screen and liner from a plugged back depth of 5,559 feet and it is flowing by heads through a three-eighths inch choke, making from 15 to 60 per cent salt water. The operators have not turned the fluid into the tanks and there is no gauge available. To the north on the Lane City area, the same operators have abandoned No. 1 Hawes and Neal at 6,546 feet after an electrical coring test showed nothing of importance.

On the Seabreeze Prospect, Chambers County, Sun Oil Co. No. 1 Acom is bottomed at 8,335 feet, waiting for casing which is to be run as a protection string and the hole will be carried deeper. An electrical coring test was made at its present depth which showed several possible sands, which will probably be tested if no showings are encountered at a lower horizon. To the southwest about 2 miles, same company's No. 2 White is bottomed at 8,869 feet waiting on orders and does not look so good.

In the same county but in the Anahuac field, Humble Oil & Refining Co. No. 1-C Middleton located about a mile east of production in the A. Middleton Survey is coring in shale below 7,070 feet, and is reported to be checking low. To the southeast in the Turtle Bay field Stanolind Oil & Gas Co. is moving in material for No. 4 State located 683 feet due south of Sun Oil Co. No. 1 Chambers which was recently completed for a 500-bbl. well.

### Turtle Bay Field

In the Turtle Bay field, Humble Oil & Refining Co. No. 1 Howard located 932 feet south of the discovery well perforated casing with 12 shots from 6,294-97 feet, and in 23 minutes tested 400 pounds of pressure, 630 feet of pipe line oil and 270 feet of salt water. The hole has been plugged back to 6,280 feet preparatory to perforating again. To the north in the J. Townsend Survey, Glenn H. McCarthy No. 4 Kilgore is coring in sandy shale below 6,250 feet and should reach the sand within the next few hours.

Normandie Oil Corp. No. 1 Prutzman, located approximately midway between the Amelia and West Beaumont areas, Jefferson County, cemented 6⅝-inch casing at 6,167 feet, and when tested through perforated casing from 5,935-40 feet it showed salt water and is to be tested at a higher level. Casing was cemented following the running of an electrical coring test which showed possible sands at 5,928-33 feet and from 5,935-40 feet. Glenn H. McCarthy No. 1-A Longe located to the northwest is coring ahead after three drill stem tests in the Miocene sand from 4,525-4,606 feet showed dry gas.

In the Nome field, Texas Canadian Oil Co. has made a location for an interesting test to be drilled a mile northeast of the discovery well on the Ward and Ward lease situated 3,400 feet east of the west line and 875 feet north of the south line of the A. Horton Survey. Sun Oil Co. No. 1 Long-Maubles located in the John Blair Survey cored gas sand from 5,987-94 feet and is coring oil sand at 6,024 feet.

In the Silsbee area, Hardin County, Republic Production Co. and Houston Oil Co. have derrick up for No. 3 fee located 1,401 feet west and 467 feet north of the northwest corner of the M. L. Kirby 200-acre tract in the G. W. Brooks Survey. The same companies' No. 2 Brooks, the relief well, is fishing for 6,000 feet of 3-inch drill stem.

### Old Ocean Field

Harrison & Abercrombie are clearing location for No. 3 Bernard River Land Development Co., 1,972 feet from their No. 2 in the Old Ocean field in Brazoria County. Actual foot measurements are 1,400 feet south of the north line of survey and 2,000 feet from No. 1 Bernard River, parallel to the survey line in the Charles Breen Survey. It will probably be drilled to the same sand as No. 1 Armstrong plantation recently completed at a record producing depth of 9,963 feet.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. have spudded their third test in the Fair-

banks area, Harris County. It is No. 1-A Dopslauf, a south offset to No. 1 Carpenter in the A. Fry Survey.

Only two wildcat locations were announced for the district. They are Cortez Oil Co. No. 1 V. and R. Kennedy in the J. M. Prado Survey, Trinity County, and Sloan & Zook No. 1 J. A. Brown located in the Pilant Lake area in the Barrett and Harris Surveys, Fort Bend County.

Sun Oil Co. No. 1 Lauter located on the southeast flank of the Clay Creek field, Washington County, pulled screen and liner from a setting made at a total depth of 7,747 feet, and on a 20-minute drill stem test from 7,432-74 feet through a quarter-inch choke on top and three-eighths inch choke on bottom. It tested 3,600 feet of salt water slightly cut with oil. The operators intend to plug back 3 to 4 feet and test again.

## LOUISIANA

The announcement of three interesting wildcat locations were the most important developments in Coastal Louisiana the past week. Northeast of the Bosco field in St. Landry Parish, Superior Oil Producing Co. is moving in a rig to the Cankton Prospect for No. 1 Adolph Savoie, 495 feet south and 400 feet west of the NE cor. section 26-8s-3e. In the northwest corner of St. Martin Parish, Shell Petroleum Corp. has a rig up for No. 1 Hefea Land Co. located on the Gecho Prospect. It is situated 440 feet south and 400 feet west of the southeast corner of the Palmire Quebedeaux 43.5-acre tract in section 38-8s-5e. The company has a block of approximately 7,500 acres which has been worked extensively with geophysical instruments.

South of the Leesville field on the Marchland Prospect, Lafourche Parish, William Helis has spudded No. 1 City of New Orleans located in section 19-23s-23e.

Mike Hogg and others No. 1 Laws Realty Co., which was completed September 6 as the discovery well of the Charenton Prospect, St. Mary Parish, is flowing 275 bbls. of fluid per day of which from 5 to 20 per cent is salt water and the operators have rigged up to work it over. The same operators' No. 1 State, about 2 miles east of the discovery well, is drilling in shale below 7,640 feet and has failed to encounter any showings at the approximate depth of the discovery well, which was completed in sand at 7,200 feet.

### South of New Orleans

On the Venice Prospect, Plaquemines Parish, Tide Water Oil Co. No. 2 Manhattan Fruit Co. located south of New Orleans in section 26-22s-36e, has spudded and is waiting for cement to set at 202 feet. It is located 200 feet southeast of No. 1 which was recently abandoned.

Harrison & Abercrombie have spudded No. 1 Verdine located 210 feet south and 210 feet east of the northwest corner of the Verdine lease in section 36-12s-10w, of the East Hackberry field in Cameron Parish.

Texas Co. No. 38 State located at the Lake Barre field, Terrebonne Parish, topped oil sand at 3,748 feet and was completed at a depth of 3,769 feet for an initial production of 1,447 bbls. of pipe line oil through a half-inch choke, with tubing pressure 420 pounds.

In the Tepetate field, Acadia Parish, Continental Oil Co. No. 1 Stoddard in section 29-9s-8 was completed through perforated casing at a depth of 8,317 feet and flowed 116 bbls. per day through an eighth-inch choke. Same company's No. 7-A Homeseekers Development Co. is bottomed at 8,346 feet and an electrical coring test was being made preparatory to running casing.

Pan American Production Co. No. 2 Garland in section 4-6s-5e, Port Barre field, St. Landry Parish, is bottomed in oil sand and is given a production test after an electrical coring test is made.

## Oklahoma Fields

*(Continued from Page 68)*

2,247 feet, shot with 430 quarts and produced 5,000,000 feet of gas, completed.

Same operator's No. 5 Trekoll, SE SE NW section 14-7-18, was a location.

### Carter County

The only completion in Carter County was Cox-Hamon No. 28 Wesley, NW NW SW section 3-4s-3w, which pumped 5 bbls. of oil in 24 hours after shooting. It had sands from 790 to 969 feet, was bottomed at 1,055 feet and plugged back to 1,000 feet.

Carter Oil Co. No. 37 Ward, NE SE NE NW section 6-4s-3w, was a location.

### Jefferson County

Twin State Oil Co. No. 1 Brown & Major, SW SE NW section 21-5s-6w, wildcat in central Jefferson County, had a series of lime and sand but was dry and abandoned at 3,623 feet, total depth, in shale.

### Comanche County

Guy Anderson No. 3 Price, SW NE NE section 30-2n-9w, Comanche County, had sand showing oil at 1,662-67 feet, total depth, but failed to make a producer and was abandoned. Ashcraft & Palmer No. 7 School Land, NW NE NW section 20-2n-10w, was dry and abandoned at 1,017 feet, total depth.

Kennedy & Musgroves No. 1 Conway, NW cor. section 3-3n-10w, was rigging up machine.

### Several First Reports

In Cleveland County, Sinclair Prairie Oil Co. and others No. 1 Bagby, SW SW NW section 27-10-2w, Moore field, was a location.

Hughes County: Barbara Oil Co. No. 11 Yoakum, C E half SE SW section 9-5-8, spudded. W. W. Bassett No. 1 Bullet, C NW NW section 11-9-11, rig. Ohio Oil Co. No. 1 Harjo, SE SE NE section 2-9-8, location.

Greer County: Neff-Godfrey & Andrea No. 1 J. L. Melton, SE NW SE section 16-3n-22w, was a location, due to start by November 10.

Caddo County: Wasteka Oil Co. No. 2-A Melton, NE SW SE section 26-6-10w, building derrick.

Stephens County: Texas Co. No. 4 Tomlin, NW SW NE NW section 15-3s-5w, drilling at 185 feet. Gulf Oil Corp. No. 2 Anderson, NW SE NW NW section 15-3s-5w, machine. Jack Cohen No. 1 Pierce, NE NE NW section 24-2s-6w, derrick.

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# Eastern Field Report

By STAFF CORRESPONDENT

# 12 MILLION-FOOT GAS WELL BEST OF DEEP COMPLETIONS

PITTSBURGH, Pa., Nov. 2.—Two deep sand tests were completed in Kanawha County, West Virginia, as good gas wells in the past week, and one proved to be dry. The largest was the test of William O. Zeibold on the Griffith and Dixon lease in Poca district. It gauges 12,400,000 feet a day. The total depth was 4,836 feet with the top of the sand at 4,822 feet. The rock pressure was 1,750 pounds after one and one-half hours.

In the Elk district, Kanawha County, Yoak Oil & Gas Co. completed the second test on the Goshorn heirs farm as a gas well gauging 4,500,000 feet a day which is larger than the initial well on this farm. The total depth was 4,916 feet with the top of the sand at 4,913 feet and a rock pressure of 1,450 pounds after one hour.

In this district, the test of the Sandy Elk Oil & Gas Co. on the Perry Moles heirs farm proved dry at a total depth of 5,055 feet. There was a small showing of oil in the sand and little gas.

There were several new locations made in the Oriskany field. In Poca district, the present location of the largest wells, the United Carbon Co. is rigging up a second test on the Ahaz Spencer farm, on Grapevine Creek, and is building a rig on the L. E. Campbell farm, same district, just east of the Ahaz Spencer farm.

In Elk district, J. H. Ake and others have a location for a test on the Jane Ramsey heirs farm on Little Sandy Creek. On Aarons Fork, United Carbon Co. is rigging up on the Forest Copenhaver farm, and West Virginia Gas Corp. is building a rig on the E. E. Walker farm.

Other wells in the field are nearing completion. In Malden district, the Owens Illinois Glass Co. is drilling at 5,214 feet in No. 7 C. Q. Crockett, a former shallow well. There is a possibility that this is on the east flank. The United Fuel Gas Co. is spudding No. 4,658 Georges Creek Land & Mining Co. and is drilling at 907 feet in No. 4,679. Columbian Carbon Co. is rigging up on the W. D. Lewis farm. Godfrey L. Cabot, Inc., is drilling four in this district, none of which are nearing the sand.

In Elk district, the Hays Oil & Gas Co. is drilling at 5,063 feet on the John Judy heirs farm. Godfrey L. Cabot, Inc., is down 4,685 feet on the R. L. Bibby farm. United Fuel Gas Co. is drilling at 4,700 feet on the Orth and Walker lease, 4,650 feet on the C. B. Graham farm, and has seven other wells drilling at shallower depths. The Columbian Carbon Co. is down 3,500 feet on the Everett Copenhaver farm, 3,335 feet on the Genevieve Minsker farm, 3,400 feet on the Maggie Given farm, 1,520 feet on the Jeff Medley farm, 2,550 feet on the C. W. Vickers farm, 485 feet on the Ida Hughart farm, and rigging up on the Susan I. Given farm. Starcher and others are drilling at 2,060 feet on the G. W. Wolfe farm.

In Poca district, the most interesting test is that of the United Carbon Co. on the George W. Facemyer farm drilling at 4,706 feet. This company has two wells nearing completion but both halted with lost bailers. No. 1 S. H. Milam is 4,750 feet deep and No. 1 W. P. Moss farm is down 4,715 feet. William O. Zeibold is drilling at 3,125 feet on the Avilee Baldwin farm. George W. Lepeire is down 700 feet on the J. W. Legg farm. The Brawley-Reed Oil & Gas Co. is drilling at 3,490 feet on the C. C. Fisher farm and the United Fuel Gas Co. at 2,430 feet on the A. J. Bruen and others lease.

Among the outside deep tests, Glen W. Roberts is drilling at 2,100 feet on his own property on the Burning Springs anticline in Burning Springs district, Wirt County. Godfrey L. Cabot, Inc., is shut down at 2,440 feet on the Julia Blankenship farm east of Creston in this district, and is drilling a deep test on the Walter Hoffman No. 1 and No. 2 leases the former at 200 feet and the latter at 250 feet. The same operator is down 700 feet on the Sarah Jones Ferrell farm in Sheridan district, Calhoun County. In Geary district, Roane County, this operator is drilling at 1,400 feet on the T. F. Smith tract.

## SOUTHEAST OHIO

No deep tests were completed in Southeast Ohio during the week. The largest completion for the week was that of the Preston Oil Co. on the Sunday Creek Coal Co. lease in the southeast quarter of section 35, Coal Township, Perry County. It was drilled into the Clinton sand at 3,634 feet and produced 130 bbls. the first day after the shot. It had a larger showing but lacked enough gas pressure to make it flow.

In this county, the Wehrle Co. completed a fair gas well. In the southwest quarter of section 35, Thorn Township, No. 3 on the Homer Beard farm was completed in the Clinton sand at 2,805 feet and it gauges 2,000,000 feet a day.

In Athens County, D. T. Orndoff completed a test on the G. L. Bryson farm in Fraction 17, Ames Township, in the Second Berea sand at 1,374 feet. It is a gas well gauging 100,000 feet a day.

In Hocking County, the Kachelmacher Estate drilled a second test on the Nelsonville Coal & Land Co. lease in section 19, Ward Township, through the Cinnamon sand to 2,130 feet. It was dry but there was a showing of gas in the Berea sand at 1,090 feet which they are trying to save.

In Licking County, Rutledge and Mossholder Oil & Gas Co. completed No. 3 William E. Teagarden farm in section 51, Perry Township, in the Berea sand at a depth of 624 feet. It will make a 2-bbl. pumper and produced 10 bbls. the first day after shot.

In Medina County, the E. R. Edson & Son Co. drilled No. 39 William P. Wertz lease, Tract 14, Lot 5, Chatham Township, through the Berea grit to 400 feet. It was a dry hole.

In Washington County, H. E. Dickson and others completed a test on the J. W. Pryor farm in section 21, Grandview Township, in the Keener sand at a depth of 1,610 feet. It produced 8 bbls. the first day after shot. In the southeast quarter of section 21, Aurelius Township, D. R. Greenlees completed No. 3 on the J. M. Dow farm in the Berea grit at 1,550 feet. It produced 4 bbls. the first day after shot.

## SOUTHWEST PENNSYLVANIA

Two producers and three gas wells were completed in Southwest Pennsylvania. In Amwell Township, Washington County, Moore-Orrill and others completed No. 8 G. L. Walker farm in the Fifth sand as a producer showing for 25 bbls. daily.

In Morris Township, Washington County, as an extension of the East Finley pool, the Union Gasoline & Oil Corp. completed No. 5 A. E. Sprowls (J. N. Clutter) farm in the Nineveh Thirty-Foot sand at 2,679 feet as a producer showing for 4 bbls. a day.

In Amwell Township, Washington County, the Carnegie Natural Gas Co. completed two wells. On the N. B. Redd farm, this company completed a second test at a total depth of 2,589 feet. The top of the Gantz sand was at 2,581 feet with 1,344,000 feet of gas at 2,589 feet. On the R. M. Carrons farm, its No. 2 was drilled to a total depth of 2,735½ feet and the top of the Thirty-Foot sand was at 2,700 feet with 408,000 feet of gas at 2,727-28 feet.

In Greene County, J. H. McNichols & Co. deepened the No. 1 on the J. W. McNichols farm in Springhill Township, to 3,358 feet. It is a gas well gauging 94,000 feet a day.

In Greene County, B. L. Frye is drilling on the Milton Martin farm in Aleppo Township, on Blacks Run. In Springhill Township, and on Pigeons Run, the North Eastern Oil & Gas Co. is drilling a second test on the Frank Burley and T. B. Ward farm. H. E. Milliken is drilling at 2,995 feet on the Peter Bradley farm. Null & Morehead are down 1,240 feet, fishing, on the Hixenbaugh farm. Myers, Hoskinson & Milliken are moving in a rig to start a test on the D. L. Headlee farm.

In Amwell Township, Washington County, the Union Gasoline & Oil Corp. reached 1,771 feet in the second test on the Martha Hazlett farm. The South Penn Oil Co. is rigging up No. 3 on the J. Q. Zimmerman farm. The Wise Oil & Gas Co. is spudding in its test on the C. W. Dunn farm.

### Deep Tests

The deep test of William Snee and others on the Summit Hotel property on Chestnut Ridge in South Union Township, Fayette County, is now down about 4,500 feet in the new hole and cementing to the bottom at 4,900 feet. The new hole was started at about 4,250 feet and will be carried on down. Work is progressing slowly due to the work being done to prevent caving.

In Mount Pleasant Township, Washington County, Norwood Johnston and others are still fishing in the deep test on the James McBurney farm. The drilling tools were lost at 6,160 feet and on top of that the fishing tools, which were recovered. It is probable that the lost tools will be by-passed.

In Independence Township, Beaver County, the Laughner-Wittmer deep test on the William Wilsman farm reached 4,809 feet and struck a pocket of gas which blew the tools up in the hole and snapped the cable and started a cave at 4,400 feet. The gas ignited and did some damage to the rig.

In Franklin Township, Butler County, the Phillips-Wittmer test on the Grossman heirs farm has not started but material is being hauled in. One mile north of Zelienople, Butler County, same interests are drilling at 4,465 feet on the Paul Fanker farm. In Slippery Rock Township, Lawrence County, the Carnegie Natural Gas Co. is down 4,150 feet in the test on the Heichel farm.

## WEST VIRGINIA

Five oil wells were completed in West Virginia during the week. In Calhoun County, Kingsbury & Dollman completed No. 3 on the Homer and Lizzie Lynch farm in Lee district at a total depth of 2,073 feet as a 5-bbl. well.

In Gilmer County, Coleman & Hamilton completed No. 3 on the A. Gainer heirs farm in DeKalb district at 1,805 feet, the Injun sand, as a 4-bbl. well.

In Ritchie County, the Linden Drilling Co. completed a well on the P. J. Fling farm in Murphy district in the Keener sand showing for 10 bbls. a day from the top of the sand which has not been drilled through. In this district, W. A. Bickerstaff deepened the test on the Howard Law farm down to the Berea sand and it is good for 3 bbls. a day.

*(Continued on Page 118)*

# Kansas Developments

By
DAL DALRYMPLE

# BIG OIL WELLS IN SCHARTZ, TRAPP, WARKENTINE FIELDS

Total potential production of Kansas oil wells reached a new high level by the end of October, according to announcement of T. A. Morgan, conservation director for the Kansas Corporation Commission, who said the potential for November is 1,429,391 bbls. daily, as against the October potential of 1,311,777 bbls. This is the fourth consecutive month the state's potential has set a new record. The new potential represents production of 18,802 wells.

Big wells in the Trapp, Schartz and Warkentine pools featured the drilling operations of the week in Kansas. Importance of the Trapp pool of southern Russell County as an area of big production was enhanced with the completion of two good producers.

Mid-Continent Petroleum Corp. No. 1 Woods, NE cor. section 4-20-10w, in the Schartz sector of western Rice County and east of the big Silica pool, made potential of 3,432 bbls. from total depth of 3,321 feet in Siliceous lime, making it the biggest producer in that section of the county. It is 1 mile from the eastern edge of the Silica pool. Many observers believe the Schartz area will prove to be an extension of Silica.

Western Kansas Oil & Refining Co. and Bridgeport Machine Co. No. 1 Detweiler, C E half SE NW section 2-23-2w, near Newton in Harvey County, made potential of 2,580 bbls., based on a six-hour natural flow of 645 bbls. Production is from Chat. Total depth is 2,993 feet. The well is one-half mile north of production in the Warkentine pool and is said to be the biggest producer ever completed in that section of Harvey County.

The Clark County wildcat and probable pool opener, the Olson Drilling Co. and others No. 1 Morrison, C SE SW section 17-32-21w, continued to swab and test. It was heading and showing oil through water with which the hole was loaded. It topped Viola lime at 6,467 feet and flowed 33 bbls. of oil on drill stem test. Total depth is 6,484 feet. It was being swabbed through 3-inch tubing.

## Russell County

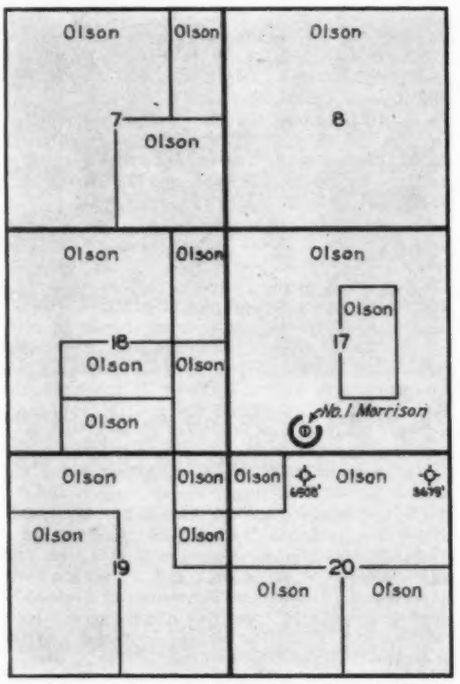
Six producing wells were completed in Russell County, including three big wells in the Trapp pool. Coralena Oil Co. No. 9 Trapp, NE SW SE section 30-15-13w, had Siliceous lime at 3,264-68 feet, total depth; acidized with 4,000 gallons and made potential of 2,508 bbls. of oil. Same operator's No. 10 Trapp, NW SW SE section 30-15-13w, made potential of 2,391 bbls. after acidizing with 4,000 gallons. It had Siliceous lime at 3,248-64 feet, total depth. W. I. Southern, Inc. No. 7 Shaffer, SE NW NE section 31-15-13w, had Siliceous lime at 3,247-53 feet, total depth, was acidized and made potential of 2,722 bbls.

Empire Oil & Refining Co. No. 6 Ehrlich, SW SW SE section 28-13-14w, made potential of 708 bbls., producing from Siliceous lime at 3,278 feet; total depth, 3,309 feet.

Central Petroleum Co. No. 3 Foster "A," SW SE NW section 3-14-15w, topped Oswald lime at 3,034 feet; total depth, 3,130 feet; acidized with 3,000 gallons and made potential of 497 bbls. Pryor & Lockhart No. 1 Polcyn, NE SW NE section 10-14-15w, had Gorham sand at 3,280-83 feet, total depth, and pumped 1,145 bbls. of oil in 20 hours.

New work in Russell County: Hartman & Blair and others No. 2 Boxberger, SE NE NW section 33-13-14w, location; Bridgeport Machine Co. No. 9 Mermis, NE SE SW section 33-13-15w, cellar; Skelly Oil Co. No. 2 Gurney, SW SE SW section 23-14-14w, old well deepening, drilling at 3,039 feet; Texas Co. No. 5 Johnson, SE NW NE section 2-14-15w, building rig; A. H. Witt No. 5 Witt, NE NE SE sec. 3-14-15w, cellar; Carter Oil Co. No. 1 Detrich, SW cor. section 8-15-13w, location; Coralena Oil Co. No. 1 Chester Sellens, SW SW NW section 29-15-13w, location; same operator's No. 2 Chester Sellens, NE NW NW section 29-15-13w, location; same operator's No. 13 Trapp, NW NW SE section 30-15-13w, rotary rig; same company's No. 14 Trapp, SW NW SE section 30-15-13w, location; W. I. Southern, Inc. No. 2 Sellens heirs "A," NE SE SW section 30-15-13w, moving in material; same operator's No. 2 Michaelis, SE NE NW section 31-15-13w, cellar; Coralena Oil Co. No. 3-A Boomhower, SW NW NW section 32-15-13w, twin, cellar; Dickey Oil Co. and others No. 1 Krug, SW NE NE section 34-15-13w, moving in material.

Bridgeport Machine Co. No. 4-B Witt, NE NE SW section 3-14-15w, topped Oswald lime at 3,035 feet; pumped 20 bbls. of oil per hour at 3,100 feet; topped Siliceous lime at 3,295 feet; and was bottomed in Granite at 3,310-15 feet. Stanolind Oil & Gas Co. No. 1 J. H. Dortland "C," NE NE SE section 5-14-15w, was acidized with 4,000 gallons, had 2,000 feet of oil in the hole and swabbed at the rate of 20 bbls. of oil an hour; total depth, 2,776 feet. Shell Petroleum Corp. No. 2 Michaelis, NW SE NE section 31-15-13w, topped Siliceous lime at 3,299 feet; total depth, 3,307 feet; acidized with 4,000 gallons and made potential of 1,945 bbls. Saco Oil Co. and Crown Petroleum Co. No. 1 Eichman, NW NE SE section 34-15-13w, had Siliceous lime at 3,315 feet and pumped 190 bbls. of oil in 21 hours.




—Mid-Continent Map Co., Wichita.

***Olson Drilling Co. No. 1 Morrison, section 17-32-21w, wildcat, is showing oil from Viola lime and looking like a pool opener in Clark County. Map shows location of wildcat near center of a big block owned by the Olson company.***

The only completion in Barton County was Yarnell & Carlson No. 1 Roth, NE cor. section 35-18-12w, wildcat, which topped Siliceous lime at 3,454 feet, had a hole full of water at 3,475-89 feet, total depth, and was dry and abandoned. Top of anhydrite was 660 feet; Kansas City lime, 3,120 feet; showing of oil, 3,330 feet.

New work in Barton County: Republic Oil Co. No. 4 Bloomer, SW SE NW section 36-17-11w, cellar; Minnehoma Oil & Gas Co. No. 11 Smith, NW NW NE section 20-18-13w, moving in material; Sinclair Prairie Oil Co. No. 5 Isern, NE SW SW section 25-19-11w, location.

## Estimated Daily Production

Estimated daily average production in Kansas for the week ending October 31 and for the preceding week was as follows:

| | Barrels | |
|---|---|---|
| | Oct. 31 | Oct. 24 |
| Oxford City | 3,900 | 3,825 |
| Burrton | 13,125 | 13,300 |
| Ritz-Canton | 5,775 | 5,775 |
| Hollow-Nikkel | 3,700 | 3,625 |
| Voshell | 2,800 | 2,825 |
| Ellsworth: | | |
| Lorraine-South Lorraine | 6,120 | 6,409 |
| Other pools | 685 | 1,577 |
| Rice-Barton counties: | | |
| Bloomer | 2,060 | 1,850 |
| Chase | 9,271 | 9,425 |
| Geneseo | 1,115 | 1,525 |
| Raymond | 2,505 | 3,175 |
| Silica | 11,815 | 13,925 |
| Keesling | 2,635 | 2,925 |
| Hauschild | 2,910 | 2,025 |
| Miscellaneous Rice | 4,619 | 4,720 |
| Miscellaneous Barton | 2,863 | 2,338 |
| Russell County: | | |
| Fairport | 1,990 | 2,325 |
| Gorham-East Gorham | 5,785 | 5,920 |
| Russell | 3,885 | 2,305 |
| Sullivan | 2,700 | 2,870 |
| Other pools | 10,001 | 8,605 |
| Sedgwick County: | | |
| Valley Center | 1,255 | 1,280 |
| Greenwich | 1,365 | 1,350 |
| Robbins | 1,120 | 1,145 |
| Eastborough | 830 | 820 |
| Other pools | 350 | 355 |
| Ellis County | 3,930 | 3,910 |
| Kingman County | 595 | 560 |
| Stafford County | 2,715 | 2,323 |
| Greenwood County | 9,500 | 9,700 |
| Butler County | 17,550 | 17,500 |
| Other fields | 24,856 | 28,372 |
| Total Kansas | 163,425 | 168,575 |

## Rice County

Four producing wells and one failure were completed and an old well was deepened and recompleted in Rice County. E. J. Shaffer and others No. 4 Hauschild, SW NW NE section 15-21-7w, the nineteenth producer to be completed in the Hauschild field, made potential of 1,463 feet. It topped Chat, or Conglomerate, pay at 3,382 feet and was bottomed at 3,396 feet.

Magnolia Petroleum Co. No. 1-A Boyer, NW cor. section 7-20-10w, Silica area, topped Siliceous lime at 3,281 feet, was bottomed at 3,290 feet and made potential of 740 bbls. before acidizing. After treating with 1,000 gallons, it made potential of 1,423 bbls.

In the Chase field, Ohio Oil Co. No. 8 Proffitt, NE NE NW section 5-20-9w, made potential of 1,499 bbls. and was completed at 3,228 feet, total depth, in Siliceous lime topped at 3,221 feet. Saco Oil Co. and Gulf Petroleum Co. No. 3 Foote, NE SE NE section 7-20-9w, topped Siliceous lime at 3,271 feet; total depth, 3,289 feet. It was acidized with 2,000 gallons and made potential of 479 bbls.

Permian Oil Co. No. 1 Monroe, C NE NE section 9-20-7w, wildcat southeast of Lyons, was shut down and temporarily abandoned at 2,605 feet, total depth.

E. J. Shaffer and others No. 2 Hauschild, NE NW NE section 15-21-7w, one of the older wells in the Hauschild pool, was deepened from 3,384 feet

to 3,398 feet, made new potential of 5,098 bbls. and was recompleted. Original potential before deepening was 2,363 bbls. Pay was topped at 3,374 feet.

Two new operations were reported in Rice County. Continental Oil Co. and others No. 1 Michells, NE NE SW section 12-18-8w, was a location. Garden & Haines No. 1 Whinery, SE NW NE section 10-21-7w, was building rotary rig.

Gulf Oil Corp. No. 2 Knop, NE NW NW section 33-19-10w, topped Siliceous lime at 3,288 feet; total depth, 3,298 feet; swabbed 10 bbls. of oil per hour and was treated with 2,000 gallons of acid. Stanolind Oil & Gas Co. No. 5 Specht, NE NE SE section 6-20-10w, topped Siliceous lime and set 7-inch casing at 3,302 feet; total depth, 3,317 feet, and swabbed 70 bbls. of oil per hour for six hours.

### Harvey County

Shell Petroleum Corp. No. 1 Balzer, SW SW NE section 8-22-3w, topped Hunton lime at 3,515 feet, based it at 3,557 feet and was bottomed at 3,565 feet. It made potential of 1,207 bbls. of oil and was completed.

Empire Oil & Refining Co. No. 1 Talbott, C W half SW NW section 1-23-2w, was a location.

### Reno County

Empire Oil & Refining Co. No. 1 Mauck, NE SE NW section 15-26-9w, on the west side of the Lerado pool, Reno County, flowed 1,475 bbls. in five hours after second acid treatment, made potential of 6,708 bbls. of oil and was completed at 4,151½ feet, total depth. It topped Viola lime, the producing horizon, at 4,143 feet. It was acidized with 2,000 gallons and flowed 1,540 bbls. in six hours, making potential of 5,837 bbls. It then was acidized with 4,000 gallons and made new potential.

In the Burrton district, Empire Oil & Refining Co. completed No. 4 Scheuchzer, C N half N half NW section 20-24-4w, after plugging back from 3,356 feet, total depth, to 3,350 feet. It was acidized, pumped 142 bbls. of oil and 25 bbls. of water in 15 hours and made potential of 230 bbls. of oil, with much water. Top of Chat was 3,322 feet.

In the Hilger area, Magnolia Petroleum Co. No. 2 Harris, NE NW NW section 9-26-4w, had Viola lime at 4,102-05 feet, total depth, was acidized and made potential of 336 bbls. of oil, with 660 bbls. of water.

Tom Palmer and others No. 1 Goering, NE SW NE section 1-23-4w, Burrton area, topped Chat at 3,254 feet, but had a hole full of water at 3,327-47 feet, total depth, and was dry and abandoned.

Westgate Oil Co. and others No. 1 Fossey, SW SW SE section 12-22-8w, was rigging up rotary. This is a wildcat, located southwest of the Haushild area of southern Rice County. Another new Reno County test was Ohio Oil Co. No. 1 Lawson, SE NE NW section 15-26-9w, building rotary rig.

Falcon, Seaboard and Shell Petroleum Corp. No. 1 Colline, C NE SW section 16-24-4w, pumped 488 bbls. of oil and 35 bbls. of water in 24 hours, but was drilling ahead at 3,375 feet. Top of Chat was 3,309 feet. McPherson Drilling Co. and Derby Oil Co. No. 5 Scheuchzer, C S half S half SW section 17-24-4w, topped Chat at 3,316 feet; had pay at 3,345-79 feet, total depth, and was flowing by heads. Ohio Oil Co. No. 4 Priddle, SW SE SE section 17-24-4w, was flowing by heads from Chat at 3,323 feet; total depth, 3,369 feet.

### Stafford County

Stanolind Oil & Gas Co. No. 1 Heyen "C," SW NW NW section 32-22-11w, Richardson area, Stafford County, had Siliceous lime at 3,563-68 feet, total depth, made potential of 965 bbls. and was completed. Top of Simpson was 3,553 feet.

Indian Territory Illuminating Oil Co. and Empire Oil & Refining Co. No. 1 Mellies, C N half N half NE section 6-22-11w, wildcat, topped anhydrite at 507 feet; Lansing, 3,170 feet; Conglomerate, 3,395 feet; Viola, 3,468 feet; Simpson, 3,480 feet; Siliceous, 3,522 feet; had a hole full of water at 3,534-36 feet, total depth, and was dry and abandoned.

D. R. Lauck and others No. 1 Snider, SW SW NE section 3-21-11w, topped Siliceous lime at 3,451 feet, but had a hole full of water at 3,485-87 feet, total depth, and was dry and abandoned.

Lario Oil & Refining Co. and others No. 1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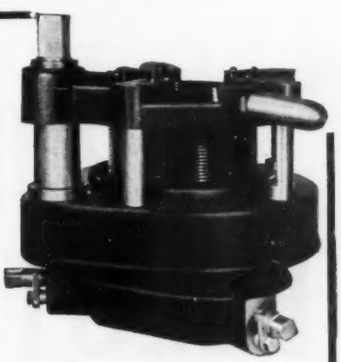

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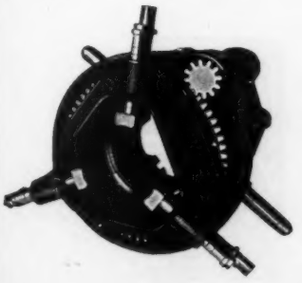

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Tudor-Morgan, SE NW NW section 23-24-13w, an old well in the St. John area, was deepened to Siliceous lime at 4,075-87 feet, total depth, opening a new producing horizon for the field. It made potential of 1,258 bbls. of oil in 24 hours, down three hours, and was recompleted.

First reports of new work in Stafford County were: Stanolind Oil & Gas Co. and others No. 5 Heyen "B," SE NE NE section 31-22-11w, location; Lario Oil & Refining Co. No. 1 Morgan, NW NW SE section 23-24-13w, building rotary rig; Stanolind Oil & Gas Co. and Amerada Petroleum Co. No. 1 Elwell, SW SW NE section 23-24-13w, an old well, rigging up to deepen.

### Ellis County

Completions in Ellis County included two producers in the Bemis area and two failures elsewhere. Empire Oil & Refining Co. No. 1 Bemis, NE NE SE section 21-11-17w, topped Siliceous lime at 3,403 feet; had pay at 3,417-20 feet, total depth, and made potential of 2,195 bbls. of oil. Margay Oil Co. No. 4 Bemis "B," SE SW SW section 15-11-17w, made potential of 1,600 bbls. and was completed at 3,397 feet, total depth. Top of Siliceous lime was 3,390 feet.

Wolf Creek Oil Co. and others No. 1 Staab, NW NW SE section 19-12-17w, in the Shutts district, had a showing of oil in Siliceous lime topped at 3,674 feet, but had a hole full of water at 3,784-86 feet, total depth, and was dry and abandoned. Same operators' No. 1 Polifka, SW SW NE section 24-13-18w, wildcat, topped anhydrite at 1,387 feet; Oswald, 3,480 feet; Conglomerate, 3,737 feet; Siliceous lime, 3,845 feet; had a hole full of water at 3,985-90 feet, total depth, and was dry and abandoned.

Muth and others No. 1 Penney, SW SW SE section 29-14-18w, wildcat, was an abandoned location.

Only one new operation was reported in Ellis County. British American Oil Producing Co. No. 1 Bemis, NW NW SW section 22-11-17w, was a location.

### Ellsworth County

Bradley & Scanlon No. 2 Nienke, NW cor. section 13-17-9w, Ellsworth County, an old well, was plugged back from 3,209 feet, total depth, in Siliceous lime, to 3,060 feet. Seven-inch casing was set at 2,953 feet; it was acidized with 3,700 gallons, pumped 151 bbls. of oil and was recompleted. Production was from Kansas City lime, topped at 2,850 feet.

### McPherson County

Continental Oil Co. and others No. 2 C. C. Graber, NW NE NW section 32-21-1w, in the Graber pool, McPherson County, was acidized with 4,000 gallons and made potential of 681 bbls. of oil. Production was from Hunton lime, topped at 3,271 feet; total depth, 3,297 feet. It was the only completion in the county.

Three new McPherson County tests were reported, as follows: Continental Oil Co. and others No. 3 Hetzke "A," NW SW SE section 20-21-1w, rotary rig; same operators' No. 3 Goering, SW SE SW section 29-21-1w, moving in material; same operators' No. 4 Goering, SE SW SW section 29-21-1w, moving in material.

### Rush County

Morgan & Flynn and others No. 2 Gisick, SE cor. section 25-18-16w, Otis area, Rush County, topped anhydrite at 978 feet; Conglomerate, 3,518 feet; gas in LaMotte sand at 3,571 feet; oil, 3,574-86 feet; total depth, 3,619 feet; plugged back to 3,605 feet; made potential of 88 bbls. of oil in 24 hours and was completed.

Work was started at a new wildcat in Rush County. Schoenfeld & Kitch No. 1 Winget, SE cor. section 15-16-16w, in the northeastern corner of the county, was rigging up.

### Butler County

Two wells were completed and two new tests were started in Butler County. Richmond Drilling Co. No. 2 Getter, C W half SE SW section 17-27-6, had sand at 2,718-48 feet, total depth, was shot with 110 quarts and pumped 25 bbls. of oil in 24 hours. Admiral Oil Co. No. 2-A Brown, C S half NE SW section 29-28-4, had pay at 2,058 feet; Siliceous lime, 2,508 feet; total depth, 2,532 feet. It pumped 25 bbls. of oil in 24 hours.

*(Continued on Page 93)*

# California Field Report

By
L. P. STOCKMAN

# TEN SECTION FIELD BROUGHT SHELL ANOTHER GOOD WELL

LOS ANGELES, Calif., Nov. 2.—California's November allowable crude oil quota remains unchanged at 544,000 bbls. daily and thus, for the sixth consecutive month the Central Committee of California Oil Producers, official curtailment committee, has held to this quota. The U. S. Bureau of Mines had previously suggested an increase to 549,500 bbls. per day. This increase of 5,500 bbls. daily was based on the recommendation of no withdrawal of crude oil from storage during November. As pointed out by Lawrence Vander Leck, chairman of the Central Committee, at the meeting, when averaged down it will be found that the state allocation has been slightly higher than the U. S. Bureau of Mines recommendation which fluctuates from month to month. California operators are opposed to such fluctuations. Although withdrawals from storage during the past few months have been heavy, stocks are practically at the same level as at the close of January, 1936. Steady additions to storage are anticipated for the next few months and the chairman urged committee members to bring pressure to bear on operators within their jurisdiction for greater cooperation in approximating their allotments. The Lake View district of the Midway-Sunset field of Kern County has swung into line again with its agreement to shut in the Lake View area for the last 10 days of each month. This action will reduce field production approximately 10,000 bbls. per day during the shut-in period. Effect of this move was evident in the daily production of October, the first day following the shutdown, when the state averaged 576,691 bbls. During the first 24 days of October, production averaged 586,297 bbls. per day or 5,655 bbls. higher than for the similar period in September.

### Index Numbers

Oil index numbers of the California Oil and Gas Association indicating comparative operations of the California petroleum industry for September vary but little from the August figures for most items. Crude oil production rose from 90.11 in August to 90.26 in September and total new supply increased from 90.03 to 91.05. Domestic demand rose from 99.60 in August to 106.67 in September, total shipments rose from 75.89 to 84.55, and total market demand rose from 91.65 to 99.27. Total stocks on the last day of September had an index number of 84.43 as compared with 86.14 for the last day of August. For the first nine months of 1936 crude oil production was 10.19 per cent more than for the same period of last year, while total imports were 42.20 per cent greater, and total new supply was 10.67 per cent higher.

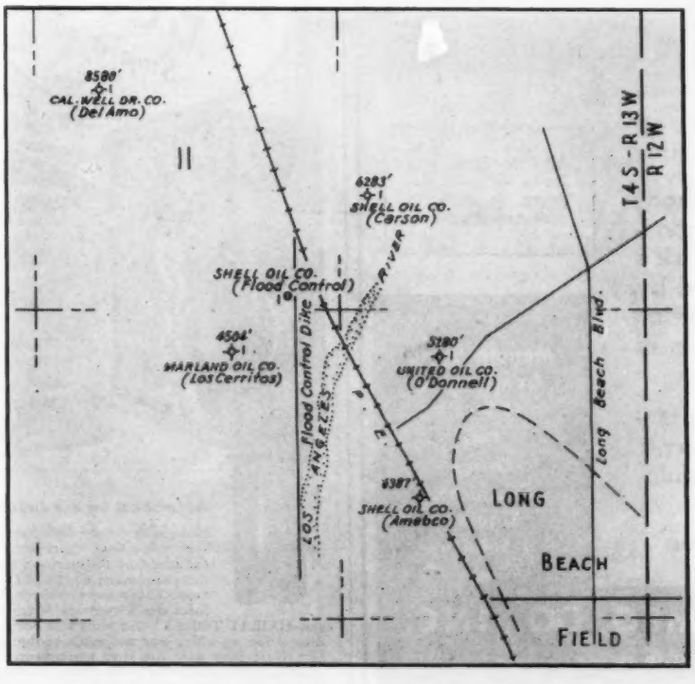
**TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS**

| | October 18 | | October 11 | | | |
|---|---|---|---|---|---|---|
| | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
| Intercoastal-domestic: | | | | | | |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 151,541 | 527,098 |
| Gasoline | ..... | ..... | ..... | ..... | 5,295,506 | 6,160,890 |
| Kerosene | ..... | ..... | ..... | ..... | 968,157 | 753,457 |
| Foreign exports: | | | | | | |
| Crude oil | 232,882 | 33,269 | 170,409 | 24,344 | 7,704,004 | 10,727,088 |
| Fuel oil | 381,263 | 54,466 | 167,294 | 23,899 | 8,585,964 | 9,942,617 |
| Diesel and gas oil | 304,547 | 43,507 | 139,495 | 19,928 | 4,789,248 | 3,629,369 |
| Gasoline | 109,582 | 15,655 | 191,367 | 27,338 | 6,304,573 | 5,522,964 |
| Kerosene | 11,259 | 1,608 | ..... | ..... | 1,265,918 | 1,013,609 |
| Other unfinished oil | 22,345 | 3,192 | ..... | ..... | 155,253 | 99,847 |
| Coastwise-domestic: | | | | | | |
| Crude oil | 216,418 | 30,917 | 195,414 | 27,916 | 5,784,330 | 5,520,535 |
| Fuel oil | 304,240 | 43,463 | 370,243 | 52,892 | 8,649,597 | 7,675,253 |
| Diesel and gas oil | 3,589 | 513 | 32,188 | 4,598 | 938,995 | 1,030,818 |
| Gasoline | 208,680 | 29,811 | 183,063 | 26,152 | 10,089,097 | 9,081,358 |
| Kerosene | ..... | ..... | 4,491 | 642 | 143,305 | 154,485 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Intercoastal-domestic: | | | | | | |
| Diesel and gas oil | 72,370 | 10,339 | ..... | ..... | 72,370 | 158,152 |
| Gasoline | 58,540 | 8,363 | ..... | ..... | 285,959 | ..... |
| Kerosene | ..... | ..... | ..... | ..... | ..... | 149,715 |
| Asphalt | 59,987 | 8,570 | ..... | ..... | 327,418 | 484,517 |
| Lubricants | ..... | ..... | ..... | ..... | 43,543 | 57,325 |
| Foreign exports: | | | | | | |
| Crude oil | 256,799 | 36,686 | 27,864 | 3,981 | 2,721,912 | 2,052,691 |
| Fuel oil | 24,077 | 3,440 | 91,194 | 13,028 | 2,242,516 | 1,837,572 |
| Diesel and gas oil | 18,047 | 2,578 | 115,639 | 16,520 | 1,578,338 | 904,651 |
| Gasoline | 264,305 | 37,758 | 160,244 | 22,892 | 3,255,379 | 2,483,326 |
| Kerosene | 6,227 | 890 | 8,112 | 1,159 | 560,758 | 627,396 |
| Lubricants | 49,903 | 7,129 | 4,797 | 685 | 323,140 | 173,507 |
| Other unfinished oil | ..... | ..... | ..... | ..... | 90,923 | ..... |
| Coastwise-domestic: | | | | | | |
| Fuel oil | 65,090 | 9,299 | 66,909 | 9,558 | 5,335,109 | 5,482,732 |
| Diesel and gas oil | 12,921 | 1,846 | 36,497 | 5,214 | 579,776 | 175,932 |
| Gasoline | 111,869 | 15,981 | 120,025 | 17,146 | 4,226,227 | 3,504,540 |
| Kerosene | 9,786 | 1,398 | 7,481 | 1,069 | 175,284 | 76,785 |

Crude oil run to stills was up 12.40 per cent. Straightrun gasoline production showed an increase of 11.72 per cent over last year and total gasoline and distillate production was higher by 16.75 per cent. Kerosene production was 21.79 per cent less than for the same period last year, lubricating oil production 19.37 per cent more, gas oil and diesel oil production 8.99 per cent higher and fuel oil production 15.56 per cent more than for the first nine months of 1935. Domestic demand was greater by 9.11 per cent and total market demand showed an increase of 6.47 per cent. For the nine-month period ending September 30, 1936, total crude oil shipments, natural gasoline shipments, fuel oil shipments and asphalt shipments showed decreases of 16.85 per cent, 33.91 per cent, 4.50 per cent and 9.34 per cent respectively. Shipments of gasoline and engine distillate, kerosene, lubricants and gas oil and diesel oil showed increases of 11.31 per cent, 8.59 per cent, 27.80 per cent and 18.33 per cent over 1935. Total stocks on the last day of September were 7.54 per cent greater than on the corresponding day, 1935.




*Shell Oil Co. has started a third outpost in a determined attempt to discover a new field beyond the northern tip of the Long Beach field*

### Ten Section

Shell Oil Co. has completed its second commercial producer in the Ten Section field of Kern County, which it discovered several months ago, and indications point to the existence of a substantial accumulation of oil and gas. Shell's new well, No. 6 Kern County Land, was brought in flowing 1,600 bbls. of clean 34 gravity oil and 1,500,000 feet of gas daily through a small flow bean from a 70-foot interval between 8,315 feet and 8,385 feet. This well proves up the existence of a normal grade of refining crude oil in contrast with the discovery well which yielded 1,500 bbls. of 60 gravity oil.

Above the 70-foot interval from which the new well is producing, Shell has cored about 500 feet of oil sand, which has been cased off, and in view of this the Ten Section field becomes of primary importance and appears capable of yielding wells with initials approximating 10,000 bbls. daily.

It begins to look as though the Shell has tied up all of the potentially productive acreage in the Ten Section field, as Ohio Oil Co. No. 1-E on Kern County Land Co.'s property in section 19-30-26 and Standard No. 10-1 K.C.L. in section 20-30-26 are already deeper than the point at which the top of the pay was logged in Shell Oil Co.'s discovery well.

There is still a possibility that commercial production may be developed outside the area included in the Shell's property in the Ten Section field. Ohio Oil Co. No. 1-E on Kern County Land Co. property is rotating ahead at 8,070 feet, while Standard Oil Co. No. 10-1 K.C.L. is making hole at 8,160 feet. The latter's No. 9-1 in section 34-30-26 has just passed the 7,200-foot level and has 500 feet to go before reaching the depth at which the pay was picked up in the Shell's discovery well. Superior Oil Co. No. 8 K.C.L. in section 11-30-26 is just getting under way.

In the Tejon ranch district of Kern County, located in the extreme southern end of the San Joaquin Basin, Reserve Oil & Gas Co. is experiencing considerable difficulty in the mechanical condition of its two wildcats and one or more additional tests may have to be drilled before the potentiality of this district can be defi-

nitely determined. Unconfirmed reports indicate that Union Oil Co. has consummated a deal with Reserve Oil & Gas Co. whereby the former will thoroughly test out the latter's holdings in the Tejon area on a development basis. A deal of this kind would be mutually advantageous to both companies and although negotiations have not been definitely closed, there is a strong probability that negotiations now pending will be successfully concluded. Reserve Oil & Gas Co.'s tests indicate the possibility that a new field exists in this area although its exact location is still undetermined. If the potentially productive area comprises a normal anticline, one more well should reveal its existence but on the other hand if this is an accumulation of oil and gas along a fault, it may require two or three additional tests to locate the presence of production. It is quite obvious that a company with limited finances is severely handicapped under these conditions.

### Wilmington

Leasing activities in the Wilmington district of Los Angeles Basin have resulted in the acquisition of several hundred acres of potentially productive oil land during the past fortnight despite the fact that this area has not yet yielded a single well which has shown large production. Under present conditions cash bonuses of $1,000 per acre and a one-sixth royalty interest appear entirely out of line based on the production of this district up to the present time. Several small pumping wells have been completed during the current year to date but in most cases operators have experienced difficulty in keeping these small wells on steady production due to sand trouble. In addition to the small production developed in the Wilmington area, the oil produced up to the present time is of the heavy, unrefinable grade of crude oil testing 16.5 degrees A.P.I. General Petroleum Corp., which focused the attention of operators on this district several months ago, has concluded drilling operations in No. 1 Terminal in section 4-5-13 at 6,814 feet. The company has cemented 1,900 feet of 4¾-inch liner and has cemented through perforations at 5,300 feet after having previously plugged back the hole to 5,510 feet. Above the 4¾-inch liner, the company has landed a 6⅝-inch combination string at 3,625 feet and cemented through perforations at 3,125 feet. It is the intention of the company to test out the lower portion of the hole for production before plugging back and perforating the 6⅝-inch opposite the two shallow zones already proved up as productive. There has been a noticeable decline in drilling operations in the Wilmington district during the past few weeks and this cessation of development reflects unsuccessful exploitation work.

### Good Well in Montebello

The Texas Co. finished an exceptionally good well in the eastern extension of Montebello field in Los Angeles Basin when No. 15 Baldwin was brought in flowing 830 bbls. of relatively clean 38.2 gravity oil and 2,910,000 feet of gas per day. If wells in the Montebello extension reflected a normal decline, No. 15 Baldwin would be considered a very satisfactory completion but, because of the abnormal decline characteristic of wells in this area, one is obliged to withhold judgment for a period of 30 or 60 days before determining the economical importance of each new completion. This section of the Montebello field has failed to show sustained production notwithstanding operators have devoted considerable attention to the cementing point. Several wells in that area have been completed as relatively large flowing wells with a negligible cut only to show an abnormally high decline in production coincident with an increasing amount of water. Universal Consolidated Oil Co. No. 1 B.C., finished a short time ago flowing 750 bbls. of exceptionally clean 38.9 gravity oil from 5,897 feet, is now flowing 460 bbls. per day. Richfield Oil Co. No. 1 Ciocca is on the beam pumping 398 bbls. of 36.2 gravity oil per day which shows a cut of 53 per cent. Standard Oil Co. has completed No. 89 Baldwin in the older section of the Montebello field and this new well was brought in on the beam pumping 110 bbls. of 27.1 gravity oil per day from 2,910 feet after the hole had been plugged back from 2,991 feet. This well, in contrast with the Texas Co. No. 15 Baldwin, which was brought in from 5,895 feet after the hole had been finished with a 7-inch liner carrying 507 feet of perforated, was completed in the Baldwin zone originally discovered by Standard Oil Co. a number of years ago.

### Mountain View

Allied Petroleum Co. concluded drilling operations on its No. 20 in the Mountain View field of Kern County at 5,457 feet and, finding the top of the Santa Margarita barren, plugged the hole back to 5,120 feet. The company conducted a formation test a few days ago and the results showed that the well was capable of producing approximately 7,000,000 feet of gas per day. The gas appeared on the surface within 90 seconds but no oil was in evidence and consequently the project will probably be suspended after a shot production test if no oil enters the hole after the head of gas has been relieved. Hogan Petroleum Co. logged the top of the Chanac at 5,307 feet in No. 2 Peters, but did not find any showings of importance. Standard Oil Co. No. 2 Mabry in the Mountain View field was good for 195 bbls. of relatively clean 22.6 gravity oil and 400,000 feet of gas per day under a natural flow when completed at 4,766 feet. In the Arvin district, southeast of the Mountain View field, Mohawk Petroleum Co. concluded drilling operations on No. 2 Earl Fruit in section 10-31-29 at 6,166 feet and the hole is being reamed preparatory to an early production test as the well log shows 41 feet of good looking oil sand just above the Schist in which the well was bottomed. General Petroleum, upon reaching a depth of 7,006 feet in its Arvin outpost, set the packer of a formation tester at 6,008 feet and with the valve open for 30 minutes recovered six stands of oily gas-cut mud and a small blow of gas. The failure of this test to show more kick resulted in the company's deciding to drill ahead.

### Kettleman Hills

In the Kettleman North Dome field,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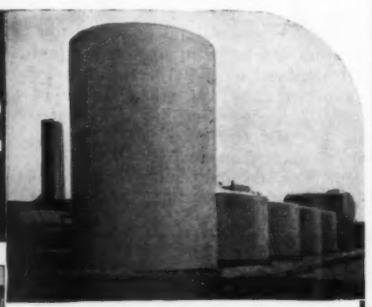

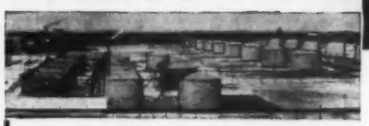

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Standard Oil Co. completed No. 61-19-J flowing 1,442 bbls. of clean 36.1 gravity oil and 942,000 feet of gas per day from 8,890 feet. This well was brought in barefoot as there is no protective casing between 8,660 feet, where the 7-inch water string was cemented, and bottom of the hole at 8,890 feet. The Etheridge Oil Co. has temporarily suspended drilling operations in its outpost, No. 1 Iowa in section 27-21-17, due to the necessity of repairing the road to the well. Both Kenda and Standard Oil Co. are making hole on potential producers in the Kettleman North Dome field and as a consequence we may anticipate the completion of several new wells within the next 60 days. Out on the west front of the Kern River field, General Petroleum Corp. has completed No. 38 Young pumping 210 bbls. of 16.8 gravity oil per day from 1,950 feet after finishing the hole with an 8⅝-inch liner carrying perforations at 1,668-1,740 feet and at 1,757-1,950 feet. Immediately upon completing this new well the company spudded in No. 39 Young and consequently this well should be ready for production within the next 15 days. Italo Petroleum Corp. and National Oil Co. should also have wells in this field ready for early production tests.

### Midway-Sunset

Midway-Sunset, which was an idle field for several years while operators were aggressively developing other new and more prolific areas, has supplanted every other field in the state as far as drilling operations are concerned. Operators are drilling 26 new wells in the Midway-Sunset field and present indications point to the probability that consistent development will continue in this district for some time to come. Kettleman North Dome, Ventura Newhall, Mountain View and Fruitvale follow in the order named with 17, 16, 12 and 11 incomplete drilling projects respectively. During the past six months several large wells have been completed at Midway-Sunset and while the two new wells chalked up this week did not show substantial production they were nevertheless commercially productive. Alford Oil Co. No. 6 Fried, in section 25-12-24, was brought in flowing 419 bbls. of exceptionally clean 23.6 gravity oil per day from 2,712 feet. This new well was finished with an 8⅝-inch water string landed at 2,522 feet and a 6⅝-inch liner carrying perforations between 2,526 feet and 2,693 feet.

Chanslor Canfield Midway Oil Co. No. 20 in section 21-32-23 was brought in pumping 180 bbls. of 21.9 gravity oil per day from 2,140 feet after the crew had run in a 6⅝-inch liner including 672 feet of perforated. Recent spuds in the Midway-Sunset field include Associated Oil Co. No. 7 Midway in section 35-31-22, Crawford Oil Co. No. 1 Midway in section 15-31-22 North American Consolidated No. 4 M. S. in section 2-32-24 and No. 3 Cypress and No. 4 W. P. of the Quality Oil Co. Associated Oil Co. is making preparations to complete No. 3 Result in the North Belridge field of Kern County and indications point to an excellent well. Casing is being run and the well should be ready for a production test within another fortnight. Continental Oil Co. has pinched in No. 8 Result which was finished a week or so ago as a large flowing well and while additional drilling will be undertaken at a later date production of the lease will be kept under restraint in conformity with curtailment operations. The North Belridge field has one of the highest degrees of curtailment in the state due to the decision of operators to hold back production until conditions improve. Existing conditions and the outlook for the future indicate that this has been a wise move. Ohio Oil Co. is nearing the depth at which commercial gas production should be found in the Buena Vista Lake gas field in its No. 1-B on Kern County Land Co. property.

### Inglewood

In the Inglewood field of Los Angeles Basin, Standard Oil Co. completed an excellent well when No. 80 Los Angeles Investment was brought in flowing 2,024 bbls. of clean 34.6 gravity oil daily from 4,090 feet. It was finished in the third zone and its initial production indicates the productivity of this field. Inglewood will become an important factor in future production and the time element is only dependent on the requirements of operators holding productive acreage within the field. Associated Oil Co. should complete a new well in this field in the near future as No. 51 Vickers is at present drilling ahead at 1,900 feet. The initial production of this well will depend on what zone is produced.

In the Huntington Beach field the Texas Co. returned No. 2 Smythe to production pumping 82 bbls. of 22.7 gravity oil per day after cleaning out the hole to bottom, 4,323 feet. Production of this well was still showing a rather high water cut but may clean up after the well has been on production for an additional several days.

In the East Coyote field where Abrams, DeAugustine and Daly Oil Co. completed a new well several weeks ago operators have drilled a number of tests in an effort to duplicate this success but have not yet been able to develop substantial clean production. Continental Oil Co. No. 2 Carlton on a production test was only good for 50 bbls. of 23.6 gravity oil per day from 2,725 feet, after the hole had been plugged back from 2,751 feet. In addition to this small production the oil shows a water cut of 50 per cent. Hancock Oil Co. No. 1 Page, which has been brought in pumping 130 bbls. of 23.2 gravity oil per day from 2,883 feet after the hole had been plugged back from 3,278 feet, is also showing an excessive water cut. In the Richfield district Union Oil Co. No. 30 Chapman has been completed pumping 201 bbls. of 24.1 gravity oil daily from 4,398 feet with the output cutting 15 per cent. In the Long Beach field the Texas Co. completed No. 20 Fields, a new well which was brought in pumping 198 bbls. of 25.2 gravity oil daily from 4,765 feet. Union Oil Co. has successfully completed No. 102 Bell in the Santa Fe Springs field but the initial daily production, 92 bbls. of 30.1 gravity oil from 4,536 feet, is showing a water cut of 20 per cent.

### Ventura Avenue

Up in the Piru section of Ventura County Bolsa Chica Oil Co. completed

*(Continued on Page 107)*

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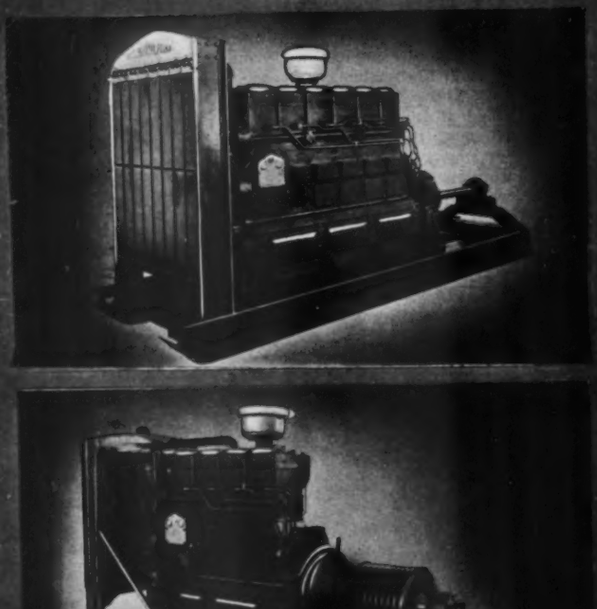

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# CUMMINS DIESELS

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# East and East Central Texas

By L. E. BREDBERG

# SULPHUR BLUFF SPREADING; TALCO OPERATORS PROTEST

DALLAS, Tex., Nov. 2.—The Sulphur Bluff pool in Hopkins County is due to receive its fourth producer within the week. Walter Goldston and others No. 2 Smith, 660 feet due east of No. 1 Smith, in the James Croft Survey, topped the Paluxy and saturation at 4,460 feet. Coring 30 feet into the member, developed sandy shale with streaks of oil sand. Almost a solid body of saturated sand was found from 4,500 feet to total depth of 4,520 feet where it was shut down to set pipe. This is another eastern extension for the field, the owner's first well making nearly a mile extension to the pool in that direction when completed about a month ago. The same owners will drill a north offset to their No. 1 Smith immediately. Two other tests are drilling and at least three heavy duty rotaries will be used in drilling Goldston, Hager and others' leases in the area during the year. Gulf Oil Corp. is also expected to enter into the drilling activities in the near future, with Empire Gas and Fuel Co., and Shell Petroleum Corp. being forced to drill offsets to the discoverers' locations and leases within a short time.

### Talco Field

Operators in the Talco field have protested to the Railroad Commission against the new allowable of the field which cut the daily well production from 100 bbls. to 75 bbls. They protest the reduction on the grounds that various factors have entered into drilling to increase these costs, and with the oil only bringing 60 cents per barrel the pay out time of a well will be extended to a great length.

There are now over 100 wells in the field, averaging 8,830 bbls. per day production for the week under the 100-bbl.-per-well allowable. The Humble Pipe Line Co. has withdrawn all the oil stored in its two 55,000-bbl. tanks in the field, taking around 9,000 bbls. per day through its 63-mile 8-inch line to Longview until this was accomplished. Runs now will be confined to daily production and possibly some independently owned oil which has been offered the company.

### Outpost Location

B. G. Byers and associates staked location on the W. T. Edwards lands, in the J. R. Slaughter Survey, more than a quarter of a mile to the south and a little east of the nearest producer in the pool, which was also about a mile and a half southeast extension a few weeks ago. This new test will either define the southeast limits of the pool or mark another extension of considerable importance.

### Refinery Allowable

The Railroad Commission has allowed the K & D Refining Co. plant in Talco field a maximum gasoline recovery of 13 per cent, 12 per cent kerosene recovery, 37 per cent gas-oil and 35 per cent fuel oil recovery with a 3 per cent loss. The company has been operating on an experimental basis for a couple of weeks to determine the recovery of the Talco crude in such plants.

### Water Troubles

Water intrusion is causing considerable trouble in the Talco field, the majority of townsite wells having water-knockouts (treaters) to settle out the water, consequently some of the operators have requested the Railroad Commission to require the plugging back of wells making high percentages of water to cut down the water intrusion. The commission has taken the problem under advisement. It will probably be necessary for all such water wells to be plugged back in order to correct the situation.

### Wildcatting

Ed Bateman and others No. 1 Love, located in the Richard Goad Survey, 3½ miles southwest of Corsicana in Navarro County, Trinity sand test, is now bottomed at 4,220 feet in sticky shale in the Lower Glen Rose of the Trinity, is to be given a Schlumberger test. No showings of oil or gas have been recorded in either the Paluxy, upper member of the Trinity, or the Glen Rose. The test is located on the Mexia-Talco fault, and for that reason has been one of considerable interest. Elevation is 422 feet.

W. A. Scarborough and associates of Dallas have contracted for a 3,500-foot hole to be drilled on a block of some 4,000 acres, 2 miles south of Bonham in Fannin County. Location has been made on the Horton farm. Fannin County is one of the northern tier of East Texas counties now getting a big lease and royalty play.

A quarter of a mile north of production in the Henderson County extension of the Cayuga field, Fred Mallison of Corsicana has staked location for a test on the Ike Brown farm in the R. H. Pearson Survey. It is also a half mile north of the Anderson County line.

H. M. Ogg has derrick up for a wildcat test 1 mile west of Buffalo in Leon County. Same is located on the O. Wiley farm in the E. Devinney Survey.

## EAST TEXAS COMPLETIONS

### Gregg County

Atlantic Refining Co. No. 13-A Nicholson, 3,619-26 feet, 59 bbls. per hour. Cox and Hamon No. 3-B fee, 3,524-80 feet, 72 bbls. per hour. Empire Gas & Fuel Co. No. 19 Jeter, 3,565-75 feet, 65 bbls. per hour; No. 20 Jeter, 3,560-69 feet, 12 bbls. in 15 minutes. Fain and McGaha No. 9 Bauknight, 3,561-3,602 feet, 25 bbls. in 15 minutes. Humphrey No. 8 Branson, 3,647-71 feet, 20 bbls. per day on pump. L.&G. Oil Co. No. 2 Greggston, 3,555-57 feet, 40 bbls. per hour. Magnolia Petroleum Co. No. 20 Ziegler, 3,460-78 feet, 110 bbls. per hour. Marine Oil Co. No. 8 York, 3,525-34 feet, 60 bbls. per hour. Shell Petroleum Corp. No. 22 Hampton, 3,676-80 feet, 25 bbls. in 30 minutes. Sinclair Prairie No. 14 York, 3,599-3,600 feet, 22 bbls. in 48 minutes. Stanolind Oil & Gas Co. No. 9 Custer, 3,631-47 feet, 68 bbls. per hour; No. 10 Custer, 3,548-70 feet, 10 bbls. per hour; No. 15 Fenton, 3,571-3,605 feet, 13 bbls. in 15 minutes; No. 10 Tuttle, 3,552-3,620 feet, 21 bbls. in 20 minutes; No. 15 McGeorge, 3,600-48 feet, 65 bbls. per hour.

Sun Oil Co. No. 33 Haynes, 3,600-48 feet, 65 bbls. per hour; No. 23 Hilburn-Lloyd, 3,660-61 feet, 10 bbls. per hour through three-eighths inch choke; No. 17 Satterwhite, 3,567-3,655 feet, 62 bbls. per hour; No. 25 Hilburn-Lloyd, 3,670-73 feet, 10 bbls. per hour through three-eighths inch choke. Bass and Dillard No. 4-B Carr, 3,479-3,514 feet, 50 bbls. in 30 minutes. T. J. Carter No. 1 Cumi Wells, 3,663-64 feet, 20 bbls. per day on pump. Central Commercial Oil Co. No. 11 King, 3,713-3,722 feet, plugged back to 3,715 feet, 80 bbls. in 2 hours. Deltra Drilling Co. No. 2 Crim, 3,518-37 feet, 20 bbls. per hour. Magnolia Petroleum Co. No. 6 Still, 3,516-18 feet, 20 bbls. in 20 minutes; No. 6 Utzman, 3,488-3,525 feet, 10 bbls. in 4 hours on pump. Merren and others No. 3 Dansb, 3,710-11 feet, 20 bbls. per hour.

### Rusk County

P. Allen No. 5 Dickerson, 3,510-60 feet, 20 bbls. in 6 hours on pump. Devonian and Gulf Oil Corp. No. 39 Motley, 3,684-3,701 feet, 80 bbls. per hour. Groneman and others No. 7 Mayfield, 3,655-65 feet, 50 bbls. in 6 hours on swab. Meco Production Co. No. 8 Williamson, 3,716-17 feet, 20 bbls. per hour. G. E. Wimberly No. 1 Gill, 3,624-25 feet, 10 bbls. in 15 minutes through one-half inch choke. Gulf Oil Corp No. 13 Stone, 3,771-78 feet, 60 bbls. per hour. Humble Oil & Refining Co. No. 22 Thompson, 3,674-3,714 feet, 40 bbls. per hour. Kennedy No. 1 Johnston, 3,813-14 feet, 30 bbls. in 8 hours on pump. Ohio Oil Co. No. 8 Kangerga, 3,618-48 feet, 15 bbls. in 15 minutes. Royal Petroleum Co. No. 9-A McDavid, dry and abandoned 3,567 feet. Stanolind and Pure Oil Co. No. 62 Siler, 3,661-82 feet, 35 bbls. per hour.

### Smith County

H. Hanbury No. 14 Sharp, 3,728-29 feet, 10 bbls. per hour on pump; No. 15 Sharp, 3,718-19 feet, 45 bbls. per hour. Texas and Gulf Petroleum Co. No. 17 Melton, 3,703-04 feet, 20 bbls. per hour. G. C. Walter No. 2 Cross, 3,675-76 feet, 85 bbls. in 6 hours on swab.

### Upshur County

J. H. Williams No. 1 O'Byrne, 3,754-72 feet, 80 bbls. fluid in 24 hours, 50 per cent salt water, on pump; No. 4 O'Byrne, 3,780-86 feet, 20 bbls. in 12 hours on pump, 40 per cent salt water. Nivia Oil Corp. No. 4 Morgan, 3,704-05 feet, 20 bbls. per day, on pump. Stanolind and Falcon Oil Co. No. 2-B Everett, 3,659-66 feet, 20 bbls. in 20 minutes. Stanolind and Tide Water No. 26-C Flewellen, 3,680-89 feet, 9 bbls. in 15 minutes.

## EAST CENTRAL TEXAS COMPLETIONS

### Anderson County

Tide Water and Seaboard No. 1 Lubben, 5,323 feet, 125 bbls. in 7 hours through five-thirty-seconds inch choke.

### Franklin County

Housh and Thompson No. 1 C. Owings, 4,136-4,310 feet, 239 bbls. in 24 hours through one-fourth inch choke.

### Henderson County

Joe A. Worsham No. 1 Smith, 4,089-4,098 feet, 118 bbls. in 24 hours through one-eighth inch choke.

### Navarro County

Gerard Corp. No. 35 Humphreys, 1,655 feet, 16 bbls. per day on pump. Spandsco Oil & Refining Co. No. 2-A Kellum, 1,367-70 feet, 5 bbls. per day on pump.

### Titus County

B. G. Byars and others No. 1-B Blackburn, 4,220-4,286 feet, 611 bbls. in 24 hours through one-fourth inch choke. Humble Oil & Refining Co. No. 1 Davis, 4,214-4,325 feet, 213 bbls. in 24 hours through one-fourth inch choke. Magnolia Petroleum Co. No. 2 Carr, 4,154-4,336 feet, 10 bbls. per hour on swab.

### Upshur County

J. K. Wadley No. 1 R. C. Barnwell, top Georgetown 4,100 feet. Dry 4,114 feet. Elevation 383 feet.

# North Louisiana, Arkansas

# TESTING RODESSA FOR DEEP PAY ZONES IN THE TRINITY

By
MITCHELL TUCKER

SHREVEPORT, La., Nov. 2.—With the exception of the 13½-mile extension test staked for the Rodessa field to the southwest, all new locations and completions were of a routine nature for the past week. There are 65 active drilling rigs on the Texas side of the field and 28 on the Louisiana side.

The Benedum-Trees Oil Co. discovery well in section 10-14-20, Nevada County, Arkansas, continues to head the list of developments as the company has definitely opened a new field 3 miles southeast of the old Irma field, as indicated by further testing of the well.

The productive limits of the Rodessa field are slowly being delineated, as tests in all directions are being drilled, or were recently completed, to indicate the extent of the field. Possibilities of deeper production here are also being tested in two wells.

The irregular occurrence of the saturated sand section in the northeastern edge of the field was further indicated by the testing of Phillips Petroleum Co. No. 1 Wilbanks, NE SW SW section 8-23-15, which found the Hill and Gloyd barren of gas or oil, the Neugent (normal zone of saturation) was entirely missing, and the Young sand carried water only. At a total depth of 6,077 feet this well is now standing for orders.

Three dry holes have been drilled at Rodessa, all on the northern flank of the field, to indicate its limits in that direction. The third dry test was abandoned in the past week, Magnolia Petroleum Co. No. 1 J. J. Moore, southeast corner of the Moore tract, John Collum Survey, about 3 miles northwest of the fault line and one location from present production. The Young sand was found to occur below the water level; casing was perforated up the hole from a total depth of 6,051 feet, but no oil or gas saturation was indicated. The hole was abandoned.

### Estimated Daily Production

Estimated daily average production by pool in North Louisiana and Arkansas for the week ending October 31 was as follows:

**NORTH LOUISIANA**

| | |
|---|---|
| Bellevue | 785 |
| Caddo light | 3,910 |
| Caddo heavy | 2,670 |
| Converse | 800 |
| Cotton Valley heavy | 265 |
| Cotton Valley light | 565 |
| De Soto and Red River | 1,405 |
| Elm Grove | 360 |
| Haynesville | 3,150 |
| Holly | 150 |
| Homer | 2,560 |
| Pleasant Hill | 145 |
| Rodessa | 54,385 |
| Sarepta-Carterville | 460 |
| Sligo* | 170 |
| Urania | 2,730 |
| Zwolle | 925 |
| Total | 75,435 |

**SOUTH ARKANSAS**

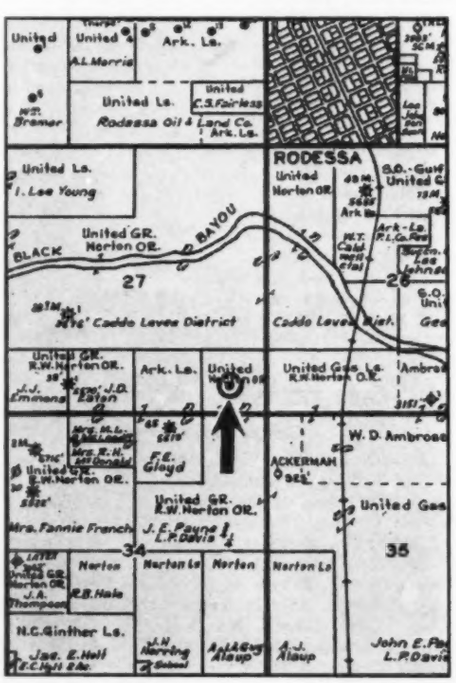
| | |
|---|---|
| Champagnolle | 2,105 |
| El Dorado | 3,100 |
| Lisbon | 295 |
| Miller County | 625 |
| Nevada | 835 |
| Smackover light | 2,170 |
| Smackover heavy | 17,715 |
| Stephens | 585 |
| Urbana | 1,680 |
| Total | 28,110 |

Texas side of Rodessa field, 15,790 bbls. daily.
*Sligo field is located in Bossier Parish. One well—gravity of oil, 40.2.

### Important Test

Probably the most important extension test ever to be made on the Rodessa structure was begun 13½ miles southwest of production. The Rodessa fault is known to extend for some 40 miles, or in the southwest direction beyond the town of Jefferson for about 15 miles into Marion County, Texas. Material is being moved in for the immediate drilling of M. H. Overless and others No. 1 Lizzie Henderson, on the R. Bennington Survey in the northern part of Marion County. A producer here would prove several thousand acres between this point and the present producing outpost in the H. Holbert Survey in southern Cass County.

While the Rodessa limits in all directions are being defined, the deeper possibilities of this structure are also being thoroughly tested. Tide Water Oil Co. is testing No. 13 Sexton, SE cor. section 14-23-16, at the base of the Young sand, total depth




—Walter E. Wylie, Maps, Shreveport.

***R. W. Norton's 10,000-foot test on downthrow side of the Rodessa fault, in search of oil accumulation adjacent to the 37-degree tilted fault to the south, either in the Travis Peak or lower beds***

6,066 feet, and plan on a Travis Peak test at this point, which is favorably situated upon the present known Rodessa structure.

### Norton Again Pioneers

R. W. Norton, original discoverer of oil at Rodessa, is again pioneering the field in search of deeper production, as his No. 1 Payne, SE cor. section 27-23-16, drills below 4,000 feet. This test is about 1 mile south of the Rodessa townsite and definitely south of the surface fault. In as much as the fault assumes a 37-degree angle inclined to the south, the Payne test has possibilities of production in the Lower Glen Rose, Travis Peak sands (if accumulation lies adjacent to the tilted fault), or possibly in lower marine beds of the Trinity. This well is scheduled for a 10,000-foot test, but may be carried deeper if conditions justify.

The theory that a lateral fault parallels the fault feature of the present field to the north has now been rather thoroughly tested. One well has been drilled and another is now being drilled about 2 miles apart, each northeast of the Rodessa townsite and paralleling the present field. The western test, Bay Oil Co. No. 1 G. E. Parker, SE cor. of G. Crowder Survey, penetrated Lower Cretaceous formations at 3,160 feet, and at a total depth of 6,050 feet only salt water had been encountered after drilling through the Rodessa horizons. This test is now standing for orders. The well to the east testing same possibilities, J. Edward Jones No. 1 M. Z. Sharp, SW SE section 4-23-16, has entered Lower Cretaceous beds about 100 feet lower than the western test, and is now drilling below 3,500 feet.

### Meeting on November 16

Still operating under the temporary gas-oil restrictive order, Rodessa operators are preparing for the next meeting to be called in Gov. Richard W. Leche's office on or about November 16, where it is expected the permanent order will be issued. The field's engineering committee will have ready at that time the recent bottom hole survey, and other complete data upon which to base their recommendation for the permanent order.

### Rodessa Completions

Lion Oil Refining Co. No. 3 Wynn, SW cor. section 9-23-15, flowed 40 bbls. per hour through three-eighths inch tubing choke, tubing pressure 550 pounds, casing pressure 1,250 pounds, saturation topped 6,045 feet, total depth 6,060 feet.

United Gas Co. No. 7 N. S. Spearman, SW cor. section 7-23-15, flowed 30 bbls. per hour through one-half inch tubing choke, tubing pressure 600 pounds, saturation topped 6,045 feet, total depth 6,075 feet.

Ohio Oil Co. No. 3 R. P. Willis, S.F.I.W. No. 1,263 Survey, Cass County, Texas, flowed 21 bbls. per hour through one-quarter inch tubing choke, tubing pressure 825 pounds, casing pressure 900 pounds, saturation topped 5,971 feet, gas-oil ratio 400 to 1, total depth 5,975 feet.

Phillips Petroleum Co. No. 1 T. H. and Sallie Stalcup, Robert Trammel Survey, flowed 386 bbls. in 24 hours on initial test, one-quarter inch tubing choke, tubing pressure 525 pounds, casing pressure 850 pounds, saturation topped 6,017 feet, total depth 6,044 feet.

United Production Co. No. 5 J. R. Jones, John Collum Survey, flowed 32 bbls. per hour through three-eighths inch tubing choke, tubing pressure 275 pounds, casing pressure 775 pounds, total depth 6,065 feet.

United Gas Co. No. 4 F. S. Simpson, James Young Survey, flowed 37 bbls. per hour through three-eighths inch tubing choke, tubing pressure 400 pounds, 1,000 gallons acid, total depth 6,025 feet, plugged back from 6,071 feet. This well found salt water in the Young sand, but plugging back and acidizing in the Dees yielded a good producer.

### Bienville Parish

J. W. Leonard No. 1 Courtney, deep test of Gibsland area, SE cor. section 5-17-7w, has been abandoned at a depth of 7,324 feet as a dry hole, after perforating up the hole to 5,242 feet without detecting favorable shows.

Lide, Marr & Greer are expected to stake location for a Travis Peak test of the Driscoll structure in Township 16, Range 5, this week. Starting of the well has been delayed pending completion of a gas unitization program.

The Texas-Seaboard Oil Co. recently abandoned its No. 1 McGee, SW NE section 3-16-6, at 5,905 feet in lime, showing salt water only. It is now arranging to return to this location and continue drilling for an 8,000- to 10,000-foot test on its extensive block.

Standard Oil Co. of Louisiana has just about completed assembling the entire Township 18, Range 6 block, and it is expected it will soon test one of the "highs" shot out by its geophysical crew in the southwest part of the block. Magnolia, Mid-Continent, Phillips and Standard are all sponsoring seismograph crews in this area at the present time.

### Bossier Parish

United Gas Public Service Co.'s oil discovery well on the southwestern flank of the Sligo gas field, H. L. Skannall No. 1-F, NE cor. section 26-17-12, was completed flowing 175 bbls. daily through one-quarter inch tubing choke, tubing pressure 500 pounds, casing pressure 950 pounds, from the Pettit lime at 5,169 to 5,201 feet, total depth.

It is reported that the Gulf Refining Co. plans an immediate deep test of its extensive holdings in the Elm Grove gas field just south of Sligo.

Premier Investment Co. of Fort Worth completed another 30-bbl. pumper on its Wyche lease in the Bellevue field, No. 35, total depth 420 feet.

### Caddo Parish

Stanolind Oil & Gas Co. No. 111 Dillon heirs, section 14-21-15, routine completion in Caddo field, pumped 55 bbls. daily after acidizing, total depth 1,684 feet. Three additional wells were staked in this vicinity during the week.

### Caldwell Parish

Crichett & Woods has abandoned No. 1 fee, NW SE NE section 18-11-3e, at a depth of 1,735 feet as a dry hole.

### Catahoula Parish

J. Ray McDermott No. 1 Louisiana Central Lumber Co., NW cor. section 15-10-5e, was dry at 2,799 feet, and has been abandoned.

### DeSoto Parish

T. W. Simmons No. 1 Johns, section 20-14-16, has been plugged and abandoned, total depth 2,800 feet.

### Grant Parish

Grant Oil Co. No. 1 Swope, SW NE SW section 17-9-1e, southern edge of Urania field, pumped 15 bbls. daily through 6-inch perforated casing, total depth 1,609 feet.

Rogers Oil Co. No. 2 Swope, SW NW SW section 17-9-1e, in the same field, pumped 75 bbls. daily initially from depth of 1,604 feet.

### LaSalle Parish

H. L. Hunt No. 8 Urania, NE SW NW section 25-10-1e, Urania field, pumped 15 bbls. per day through perforated casing, total depth 1,542 feet.

### Red River Parish

Appearing as a possible pool opener two weeks ago, W. J. Hunter and others No. 1 Long Bell Lumber Co., section 19-13-9, set casing at 3,696 feet to test saturated sand cored from 3,706 to 3,719 feet. Drill stem test indicated salt water only, and operators plan to recement the casing, thinking that the present water is from upper formations. Should this section prove dry, test will be carried to its original objective in the Lower Trinity.

### Sabine Parish

Cox & Whitehurst No. 1 Whitney Corp., section 8-9-13, Lower Glen Rose test of Converse field, is now mixing mud preparatory to running 5-inch casing and testing the large gas and distillate showing obtained from the Oolitic lime zone several weeks ago. Total depth is 5,503 feet.

A. H. Tarver No. 2 Baker, section 36-8-12, deep test of the Zwolle structure, is showing salt water only at a depth of 6,200 feet. Drill stem test from 6,000 to 6,200 feet showed hole full of mud and salt water. Schlumberger test indicated negative results. Well is now in the Lower Glen Rose formation, and it is expected to be abandoned at this depth.

### Webster Parish

To date, Ohio Oil Co. No. 6 Holloway, section 23-21-10, deep discovery at Cotton Valley, has produced over 40,000 bbls. of high-gravity oil. The well is now producing at the rate of about 600 bbls. daily, tubing choke three-quarter inch, tubing pressure 450 pounds, casing pressure 850 feet. Production is coming from the Holloway sand, a short distance below top of Travis Peak.

Magnolia's offset test to the east, No. 5 Ira Cox, section 23-21-10, drilled the Holloway sand from 5,515 to 5,523 feet, and on drill stem test indicated 15,000,000 feet of gas with slight show of distillate. Total depth, 5,530 feet, preparing to drill ahead.

Standard Oil Co. of Louisiana is reported to be adding to its holdings southwest of the Sibley discovery gas-distillate well. It is expected the company will announce a location soon in section 10-17-9w, which is situated down the dip from the gas-distillate production, and at a point considered attractive for oil production.

Seaboard Oil Co. of Delaware has begun drill-

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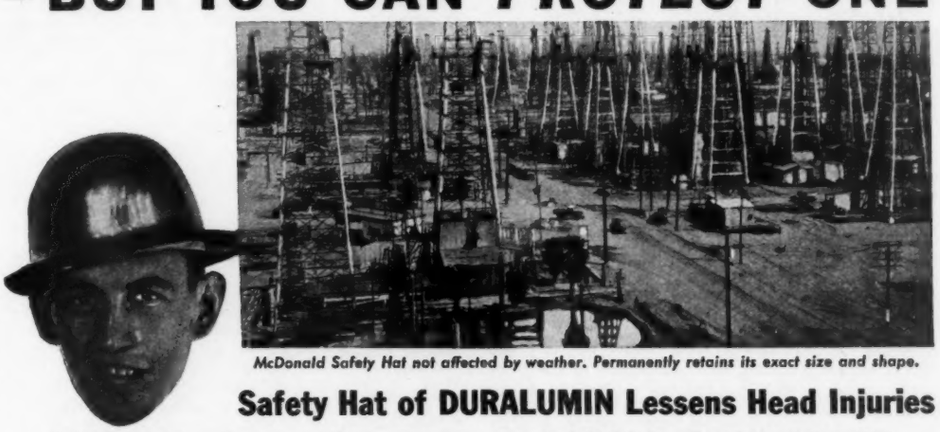

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ing operations at No. 1 Cotton Valley Land & Lumber Co., NW SW section 35-22-10, on their 6,500-acre block. A deep Travis Peak test is contemplated if upper beds are found barren.

## ARKANSAS

### Hempstead County

Imperial Oil Products Co. No. 1 Foster, section 35-12-26, holds the center of interest among the four wells being drilled in the McNab-Hope area to test shore line possibilities here. After coring and drilling 200 feet of good porous but nonsaturated sand in the Travis Peak, going from the red beds into jet black shale, the bit went into the second flint conglomerate stringer at 3,412 feet, where drilling is continuing at 3,430 feet. The present significance of this well lies in the fact that it is the first well in the territory to ever drill through the first conglomerate section, previously thought to be Paleozoic cap rock, and to find the porous sands of the Travis Peak present below.

### Lonoke County

Frank F. Silver and others No. 1 Joe Chambers Estate, NE NW section 17-2n-7w, has been abandoned as dry at a depth of 1,980 feet in hard rock.

### Columbia County

King Oil Co. No. 1 Kitchen and others, NE SE NW section 13-17-22, Travis Peak wildcat test, 6 miles west of Magnolia, is now drilling below 1,800 feet.

### Pope County

Arkansas-Louisiana Gas Co. No. 1 Smith, section 10-8n-21w, in the north-central part of Arkansas, is drilling at 2,050 feet for a wildcat test of that territory.

### Nevada County

Appearing definitely to be a pool opener in the southern part of Nevada County, Arkansas, about 3 miles southeast of production in the old Irma field, Benedum & Trees Oil Co. No. 1 Grove Land & Timber Co., N half SE NW section 10-14-20, set 8¼-inch casing at 2,170 feet, and after continuous bailing the fluid level remains at about 200 feet from top. Total depth is 2,190 feet. Pumping equipment is now being installed. Estimates on the productivity of the well range from 300 to 600 bbls. daily. Oil is coming from sand 2,184 to 2,190 feet, believed to be the Woodbine, or some basal Upper Cretaceous member. Crude tests 22 degrees gravity or better, indicating definitely that it is not from the Nacatoch sand productive in the old Irma field, which is a 15-degree asphaltic oil. Some geologists are correlating this production with the Buckrange sand productive in the Stephens field a few miles to the south.

Four 500-bbl. tanks have been erected, and survey is being made for a 20-mile pipe line to Camden, Ark., to handle future production.

This test was originally planned as a Trinity or Travis Peak test, and in as much as original terms of the lease call for a 6,000-foot hole, additional exploration may be expected here soon.

## EAST TEXAS (Border Counties)

Search for production in the Trinity series, probably in the Lower Glen Rose, in the East Texas border counties, has caused one of the most active leasing and geophysical campaigns to be seen in East Texas for several years. Both majors and independents are active in assembling acreage, while five new tests were staked this week in the area. A large portion of the territory is now under lease, most of it in extensive blocks, some calling for immediate testing. A total of 14 seismograph crews are reported in the area at this time. Panola County is probably the scene of greatest interest, and eight wells are drilling in the vicinity of Carthage, Texas, at the present time, all having Lower Glen Rose as their objective.

### Harrison County

Eastern Texas Oil Co. No. 1 Bivens Farms Co., William Pettus Survey, 9 miles south of Hallsville, has been abandoned in the Georgetown lime, total depth 3,129 feet.

Geyer Oil Co. is rigging up for its No. 1 Alex Moore, 5 miles southwest of Waskom gas field on the C. W. Fields Survey.

H. H. Roberts is building derrick for his No. 1 Z. Douglas, NE cor. of 75-acre tract, S. Fields Survey.

### Marion County

Material is being moved in for Moorefield & Price No. 1 Benefield, a deep test 4 miles west of Oil City, La., on the Robert Potter Survey.

The 13½-mile extension test of the Rodessa field, staked this week by M. H. Overless and others on the R. Bennington Survey, is looked upon as the most important test ever to be made in Marion County.

### Panola County

Yandel Rogers has made location for No. 1 Cameron Lumber Co., Glen Rose test, 7 miles north of Carthage, on the William A. Lagrove Survey.

## MISSISSIPPI

State of Mississippi No. 4 fee, C N half section 35-6n-1e, was being completed as the second gasser on state-owned land known as the insane hospital property, situated in the heart of the Jackson gas field. The well has not yet been gauged, but is indicated as a 40,000,000-foot well.

Derrick and equipment is being moved from this well to the site for Mississipi's deep 5,500-foot test in search of oil on the Jackson structure. Contract calls for a test to this depth, and unless oil is found at lesser depth, the state mineral lease commission is expected to authorize further drilling.

## Rocky Mountain Fields

*(Continued from Page 75)*

31-31-4w, was a failure and abandoned. The Texas Co. previously had drilled three wildcats at widely separated locations in Pondera County trying to find the shore line with like results. These failures point to the trend being in some other direction. Three weeks ago H. R. Patterson No. 1 Chatterton, SE SE NE section 22-32n-6w, 4 miles southwest of production, was completed at 3,324 feet, and while it made only 20 bbls. a day, it was a producer. This week Patterson No. 1 Cole, C NE SW section 2-32n-6w, a little to the west of production and between his No. 1 Chatterton and the good producers in section 1, had a show for 3,000,000 feet of gas at 2,163-75 feet and is drilling ahead to the Cut Bank sand. Whether these wells indicate that the trend is to the southwest instead of southeast is at present a matter of speculation.

There was one completion in Cut Bank, R. C. Tarrant No. 3 State, NE SE NE section 36-34n-6w, which was plugged and abandoned at 2,936 feet. The Sunburst at 2,800-15 feet was dry. The Cut Bank at 2,863-98 feet showed only 100 feet of oil and a shot with 40 quarts failed to improve the well. There were no new operations.

A. B. Cobb No. 2 All.-115, SE NE SE sec. 31-33n-5w. Spdg. 60 ft.

Drumheller Reservation Synd. No. 1 Tarrant, C SW SW sec. 21-23n-6w. Skidded rig 10 ft.; spdg. 60 ft. in new hole.

H. F. Patterson No. 1 Cole, C NE SW sec. 2-32n-6w. Drlg. 2,580 ft.; 8¼-in. cmtd. 2,160 ft.; S.G. 2,163-75 ft.

Wm. Hanlon, Agt., No. 1 All.-128, C SE NE sec. 12-32n-6w. Drlg. 510 ft.

Montana Power Gas Co. No. 3 Simero, C NE SE sec. 6-33n-5w. Spdg.

Montana Power Gas Co. No. 1 Schuette, Unit 1, 2,640 ft. E of W line, 500 ft. S of N line, sec. 5-34n-5w. Drlg. 300 ft.

Nadeau Bros. No. 2 Ewald, C SE NW sec. 9-32n-5w. Drlg. 2,450 ft.

R. C. Tarrant No. 7 Getty, SW NW SW sec. 2-34n-6w. Drlg. 2,020 ft.

R. C. Tarrant No. 3 Reichoff, C NE NE sec. 36-32-6w. Drlg. 2,525 ft.

Vern Johnson No. 1 Tribal-118, C SW SW sec. 1-32n-6w. S.D. 2,900 ft. for 8¼-in.

Texas Co. No. 4 Tribal-121, C NW SE sec. 36-33n-6w. Spd. Oct. 14; drlg. 2,710 ft.

Texas Co. No. 6 Tribal-122, C NE SE sec. 6-32n-5w. Cmtd. 10¾-in. 294 ft.; 100 sacks.

Texas Co. No. 3 Tribal-121, C SE SE sec. 36-33n-6w. Drlg. 2,416 ft.

Texas Co. No. 5 Tribal-122, CNL SW SW sec. 5-32n-5w. T.D. 2,890 ft.; M.O. spudder.

A. E. Wilkinson No. 2 All.-127, C SE NE sec. 1-32n-6w. Drlg. 1,250 ft.; Colo. 600 ft.; 10¾-in. 640 ft.

A. E. Wilkinson No. 2 Tribal-126, NW NW NW sec. 7-32n-5w. Drlg. 330 ft.

#### Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15w. Drlg. 1,451 ft.

#### Musselshell County

Geo. Gregory et al No. 24-A Govt., NW SW NW sec. 25-11n-24e. Drlg. 339 ft.

#### Petroleum County

Homestake Oil Co. No. 25-A, SE NW NW SW sec. 10-15n-29e. Drlg. 750 ft.; 10-in. 323 ft.; (first report).

H. C. Rowland No. 1 Kalispel, NE NE SE sec. 35-14n-25e. Drlg. 405 ft.

#### Phillips County

Montana-Dakota Utilities Co. No. 1 Garrison, SW SE SE sec. 6-31n-34e. (Bowdoin gas field). Drlg. 600 ft.; cmtd. 8¼-in. at 190 ft.

### Pondera County

The Montana Power Gas Co. No. 1 Lena Berger, C NE section 31-31n-4w, a wildcat, was plugged and abandoned at a total depth of 2,826 feet. The Sunburst sand at 2,718-30 feet was hard and dry. The Cut Bank sand was at 2,740-2,810 feet and made 5 bailers of water per hour at 2,800-10 feet. Top of the Ellis was at 2,810 feet and elevation 3,790 feet.

Clinch Pet., Ltd., No. 1 Holan, NW SW NW sec. 12-23s-6w. S.D. 2,200 ft.

Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. S.D. 2,345 ft.

Kirk Oil Co. No. 1 Kellogg, SE NW NE sec. 31-28n-4w. T.D. 560 ft.; W.O. csg.

#### Sheridan County

Cheyenne O. & G. Co. No. 1 Olson, SE SE SE sec. 14-35n-53e. S.D. 2,615 ft.; 500,000 ft. of gas 1,050 ft. and 500,000 ft. at 1,305 ft.; S.O. with 12½-in.

#### Teton County

R. C. Tarrant No. 1 Jones, C SE NW sec. 3-26n-6w. M.I.M.

### Toole County

There was one completion and two new locations in the Kevin-Sunburst field. Huso Brothers No. 2 Davis, C NE SE section 14-35n-3w, pumped 20 bbls. per day after acidizing at a total depth of 1,715 feet after plugging back from 1,765 feet. The pay was at 1,705-15 feet.

The General Oil Co. No. 3 Haggerty, NE SW SW section 13-35n-2w, reported a completion last week at 1,515 feet with 600 feet of oil, pumped 18 bbls. per day after acidizing.

Agen & Krause Co. No. 1 Krause, SE SE SE sec. 9-35n-3w. Loc.

Agen & Goeddertz No. 3 State, NE SW NE sec. 16-35n-3w. T.D. 1,745 ft.; fsg.

Alexander-Sorrell No. 1 Strange, NE SE SE sec. 31-35n-3w. S.D. 1,585 ft.

B. A. S. Arnold No. 5 Govt., SE NW NW sec. 21-35n-3w. Spdg. 10 ft. (first report).

Big West Oil Co. No. 4 Dahlquist, NE NE NW sec. 21-35n-3w. Drlg. 1,265 ft. (first report).

Cassidy et al No. 3 Carlson, CNL SW NE sec. 22-35n-3w. T.D. 1,805 ft.; will P.B. and test.

Coolidge & Coolidge No. 1 Haskins, SW SE SW sec. 25-36n-2w. Drlg. 1,420 ft.

A. E. Crumley No. 11 Shaw, SE NW NE sec. 35-36n-2w. Drlg. 700 ft.

W. M. Fulton No. 1 Thompson, NW SW NE sec. 28-35n-3w. Bldg. rig.

Stanley Gray No. 1 Aronow, CWL NW SW sec. 12-35n-3w. Drlg. 1,125 ft.

Pfabe & Engleking No. 1 Hurley, SW NE NW sec. 8-34n-2w. Drlg. 750 ft.

Frazier & Smith No. 1 Van Note, CWL SW NW sec. 30-35n-2w. S.D. 1,400 ft.

Munger No. 1 Peterson, NW NW SW sec. 8-35n-2w. Ellis-Madison at 1,648-54 ft.; testing; will acidize again.

Welch Bros. No. 2 Larum, SW SW NW sec. 25-35n-3w. Drlg. 1,180 ft.

#### Yellowstone County

R. C. Tarrant No. 1 Mosser, CWL SW NE sec. 26-3s-24e. Drlg. 2,430 ft. in wet hole; top Tensleep 2,200 ft.; swb. 75 bbls. in Dakota topped at 995 ft.; followed by wtr. at 1,015 ft.

R. C. Tarrant No. 1 Metzger, C SW NW sec. 8-2s-25e. T.D. 1,060 ft.; wtr. in Lakota; will P.B. and complete as gas well in Dakota.

## NEBRASKA

Nebraska had its first completion this week in the wildcat play which is under way in that state and scored a failure. Byrd-Frost, Inc., and Magnolia Petroleum Co. No. 1 Abbott, NE NE NW section 22-24n-38w, in the Hyannis district in Grant County, had granite wash at 4,008 feet and topped the true granite at 4,036 feet and was abandoned at 4,040 feet. The company has a block of 725,000 acres, including most of Grant County, and the Hyannis high was blocked as a structure embracing 68,000 acres inside a 500-foot downthrow of a fault. Like the Indian Territory Illuminating Oil Co. test at Beecher Island, in Yuma County, Colorado, the granite was found much higher than expected. It was believed the test would go to 7,800 feet before hitting the granite.

#### Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-32n-50w. Drlg. 1,831 ft.

#### Redwillow County

C. W. Kelly et al No. 1 Bower, SE NW SE sec. 2-2n-29w. S.D. 1,450 ft.

#### Sioux County

J. M. Huber Corp. and United Producers, Inc., et al No. 1 Morgan, C SW SW sec. 32-95n-56w. Drlg. 1,837 ft.

#### Franklin County

Wm. Steinlee No. 1, SE NE SE sec. 25-1n-15w. Spdg. 60 ft.

## UTAH

#### Daggett County

Mountain Fuel Supply Co. No. 1 State, NW SE SW sec. 16-3n-24e. Cg. 6,114 ft.

#### Emery County

California Co. No. 1 Palm Unit, C SW SW sec. 22-23s-11e. T.D. 2,285 ft.; circulating.

# West and North Texas

By
L. E. BREDBERG

# IMPORTANT WILDCATS STILL BEING HANDLED WITH CARE

FORT WORTH, Tex., Nov. 2.—Several wildcats and semiwildcats holding the center of interest in West Texas are still in the incompleted stage, with one of them nearing completion to open another county to production for the district.

The southeastern Cochran County wildcat of the Cascade Oil Corp. and others on the Duggan ranch, in Labour 14, League 55, Oldham County School Lands Survey, is still in an incomplete state after shooting with 160 quarts of nitroglycerin at 5,019-60 feet. The hole bridged when shot, causing a cleanout job. It made 85 bbls. in 15 hours while cleaning out and looked good for at least 300 bbls. or more when placed on the pump after the hole is cleaned. The well was drilled to a total depth of 5,098 feet, in lime, but had to be plugged back to 5,063 feet to shut off salt water, as was the case in the same company's discovery well about 27 miles to the south in southeast Yoakum County. It will probably be completed within the week and its potential announced.

This is an important strike due to the fact that it is the northernmost producing well and discovery in the Permian Lime Basin and opens a vast amount of territory to exploitation. Its discovery will lead to the drilling of a number of wildcats in Cochran and adjacent counties, although several deep tests have already been drilled near the center of the county, several of them getting good oil showings but failing to make producers.

In Dawson County, Ray Albaugh and others are preparing to drill plugs on No. 1 Robinson in section 46, Block M. Fluid rose to within 200 feet of the top of the hole, which stands bottomed at 5,038 feet. The bottom 300 feet of fluid is salt water, the remainder oil. The test is to be given a shot, the results of which will be closely watched.

While the Ordovician wildcat 14½ miles east of Eldorado, in Schleicher County, has nothing more to report than was carried in this column last week, another Ordovician producer is expected to be completed soon in the Sand Hills area in western Crane County. Gulf Oil Corp.'s No. 2 Waddell, located 1½ miles northeast of the company's Ordovician discovery in that area, topped the Ellenberger, pay member of the Ordovician, at 6,507 feet, 3,888 feet subsea datum, and is coring ahead about 60 feet deeper at this writing. It is in section 18, Block 21, P.S.L. Survey, and is running about 130 feet lower than the first Ordovician producer in the area.

### ANOTHER DISAPPOINTMENT

Wilcox Oil & Gas Co. No. 1 Hugh Spiller, located in section 15, Brooks and Burleson Survey, near Junction, spelled another disappointment this week when it encountered water at 3,015-35 feet, showing a later increase, and was ordered abandoned at a total depth of 3,295 feet. Elevation is 2,089 feet. This is the company's second try for production in that county, both proving failures.

Moore Brothers of San Angelo have abandoned their wildcat venture in Borden County as a failure after drilling to a total depth of 3,450 feet, with an elevation of 2,564 feet. Same was sunk on lands of Clayton-Johnson, in section 20, Block 32, Township 4n, T.&P. Survey.

The outpost test north of production in the Keystone field, Winkler County, Richardson Oils, Inc., No. 1 Brashara, located in section 21, Block 77, P.S.L. Survey, has extended that field nearly another mile north. The well was a small one, making only 98 bbls. per day from pay topped at 3,357 feet, and after shooting. Bottom of the hole is 3,450 feet.

The new extension or pool opener in western Ector County, Empire Gas & Fuel Co. No. 1-C Cummins, located in section 22, Block 45, T.&P. Survey, 2½ miles northwest of the Cummins pool, to which it will probably be linked by production, is still incomplete although flowing about 125 bbls. per day by heads, through casing, and showing no water on last reports. Total depth of the hole is 4,293 feet and acid is to be used this week before completing the well.

R. H. Henderson and others No. 1 Parker, located in section 111, Block P, about one-half mile southwest of the Fuhrman pool in Andrews County, may make a small producer and an extension to the pool in that direction, although it also appears as a defining well. It will be shot. Total depth is 4,555 feet, and oil saturated lime was logged at 4,490-4,555 feet.

One-half mile northeast of production in the Cowden field, Ector County, Atlantic Refining Co. and Tide Water Oil Co. No. 1-C Holt, in section 20, Block 43, Township 1n, T.&P. Survey, is destined to make a producer and likewise an extension in that direction for the field. It logged the best pay at 4,288-93 feet, when it cleaned itself, and was shut down at 4,296 feet, in lime. It will probably be given a shot.

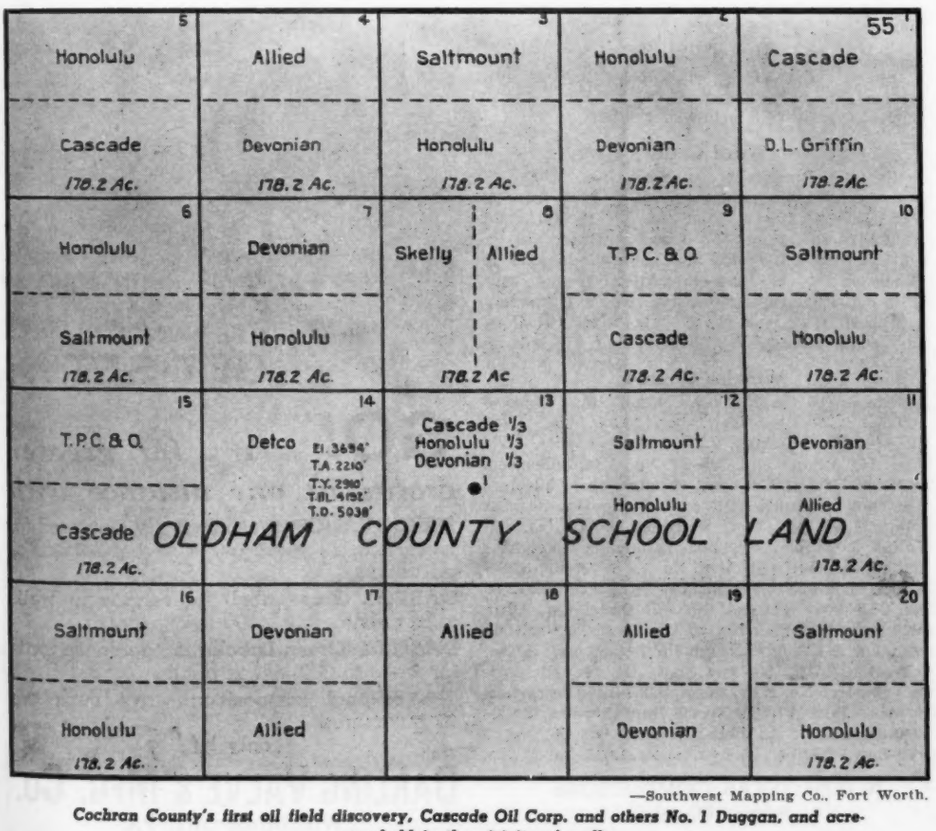
### STRIKES SULFUR WATER

Stanolind Oil & Gas Co. No. 2-B Cowden, in section 10, Block 43, Township 2s, T.&P. Survey, 1 mile northwest of production in the Foster or Odessa pool, Ector County, struck sulfur water at 4,445 feet, total depth and has plugged back to shut off water at 4,434 feet. It appears as only a small well at this writing, and may define the limits of the field on that side. It was expected to make a connecting link between the Foster area and the Landreth-Johnson producer, 2 miles north in section 47. Sinclair Prairie Oil Co. No. 1-A Johnson, in section 42, Block 42, Township 1s, has failed to make a producer from the Foster pay and is drilling ahead in search of deeper production. It is now down around 5,200 feet with no showings of oil or gas reported. It is about 2 miles east of the Landreth-Johnson producer.

Another mile extension to production is assured for the southeastern side of the Cowden field in northern Ector County by the Eppenauer Drilling Co. No. 1-C T.&P. Land and Trust Co. test in section 23, Block 43, Township 1s, T.&P. Survey. It topped the first oil at 4,074 feet, and is drilling ahead below 4,150 feet with a hole full of oil. A couple of other extensions, only a quarter of a mile in extent in each case, were registered in Ector County this week.

Navarro Oil Co. No. 2 Crenshaw, located in section 35, Block 26, P.S.L. Survey, Winkler County, proved nearly a mile west extension to the Kermit area when it flowed 1,023 bbls. in 24 hours after shooting from 2,705-3,146 feet, total depth.

Southern Ward County received a setback this week when Texas Pacific and Atlantic Refining Co. No. 1 Buckners Orphans Home, located in section 3, Block 32, H.&T.C. Survey, was ordered plugged at a total depth of 2,245 feet after shoot-




—Southwest Mapping Co., Fort Worth.

***Cochran County's first oil field discovery, Cascade Oil Corp. and others No. 1 Duggan, and acreage held in the vicinity of well***

ing from 2,100 feet to the total depth with no results.

The Fleetborn Oil Co. has staked locations for a couple of tests in Glasscock County offsetting Floyd Dodson and others' discovery on lands of the Carter heirs in section 33, Township 3s, T.&P. Survey. The Dodson well was plugged back from total depth of 2,669 feet to 2,664 feet to shut off water and is pumping 72 bbls. of oil, plus 40 per cent water. It is north of Garden City and south of the World pool.

Oyster and others have abandoned their No. 1 King, located in the N. Scott Survey, 1 mile south of Lueders in eastern Jones County, at a total depth of 2,034 feet in the King sand, after striking a hole full of water.

### Wichita Falls District

The North Texas (Wichita Falls) district showed an increase in activities during the week when 55 tests were reported completed. Of this number 26 were dry, but 3,845 bbls. of new daily production was added by the remaining 29 tests. Forty-nine locations were staked in the district this week for new tests.

Carlisle and others have staked location for a wildcat on the J. P. Knox estate lands in the southeast corner of R. Howard Survey, in Denton County, and Guy Cox of Dallas is preparing to move in equipment to drill on the D. R. Clark lands, in the John Roland Survey, near Westminster in Collin County, at once, preparing to sink a 3,500-foot wildcat.

### Panhandle District

Tom Collins of Channing, Tex., has blocked 5,000 acres about 7 miles northeast of that town in Moore County, and is preparing to sink a 4,000-foot test. Location has not yet been announced.

## WEST TEXAS COMPLETIONS

### Borden County

Moore Brothers No. 1 Clayton-Johnson, dry and abandoned 3,450 feet, elevation 2,564 feet.

### Crane County

Gulf Oil Corp. No. 137 McElroy, 2,719-2,955 feet, shot, 207 bbls. oil and 23 bbls. water. Magnolia Petroleum Co. No. 7 Edwards, 3,288-3,614 feet, shot, 4,264 bbls.

### Ector County

Dunning No. 2-A Cummins, 4,237-97 feet, acidized and shot, 541 bbls.

### Howard County

Continental Oil Co. No. 11 Eason, 2,396-2,422 feet, acidized, 1,242 bbls. Sinclair Prairie Oil Co. No. 5-B Davis, 2,472-2,818 feet, shot, 842 bbls.; No. 4 Texas Land & Mortgage Co., 2,655-2,820 feet, shot, 600 bbls.

### Jones County

Ungren and Frazier No. 4-C Dorsey, total depth 2,058 feet, 770 bbls.

### Kimble County

Wilcox Oil & Gas Co. No. 1 H. Spiller, dry and abandoned 3,295 feet, elevation 2,089 feet.

### Pecos County

Buell and others No. 1-A Pecos Valley, total depth 1,625 feet, shot, 50 bbls. R. T. Bucey and others No. 2 Pecos Valley, 1,557-1,650 feet, shot, 150 bbls. through 1-inch tubing. Cardinal Oil Co. No. 43-E Tippett, 599-600 feet, 280 bbls. Ohio Oil Co. No. 9-G Yates, 1,125-1,338 feet, 261 bbls. per hour.

### Upton County

Smith and Cravens No. 4 Reese, 2,280-93 feet, acidized, 864 bbls. Stanolind Oil & Gas Co. No. 41 Burleson, 2,059 feet, acidized, 798 bbls.

### Ward County

Republic Production Co. No. 2 Fox, 2,200-2,329 feet, shot, 306 bbls.; No. 3 Fox, 2,227-2,308 feet, 513 bbls. Empire Gas & Fuel Co. No. 8 McDonald, 2,320-2,475 feet, shot, 557 bbls. Rio Bravo Oil Co. No. 12 Olcott, 2,184-2,457 feet, shot, 551 bbls. S. A. Thompson No. 14 Johnson, 2,319-2,535 feet, shot, 915 bbls. Richardson Oils, Inc. No. 9 Hathaway, 2,488-2,670 feet, shot, 1,783 bbls. Gulf Oil Corp. No. 59 Hutchins, 2,625-2,739 feet, shot, 174 bbls.

### Winkler County

Illinois Oil Co. No. 3-B Central State Bank of Abilene, 2,780-3,140 feet, shot, 1,525 bbls. J. C. Maxwell No. 3 Gartex, 2,718-3,096 feet, shot, 1,314 bbls. H. Adams and others No. 1-B Thompson, 2,879-3,100 feet, 978 bbls. through three-quarters inch choke. Humble Oil & Refining Co. No. 7-A Colby, 2,828-3,100 feet, shot, 661 bbls.; No. 6-C Walton, 3,090 feet, 3,083 bbls. through seven-eighths inch choke. Gulf Oil Corp. No. 14 Keystone, 3,335-75 feet, shot, 455 bbls.; No. 7-A Daugherty, 2,612-32 feet, 21,303,000 feet gas; No. 8-B Daugherty, 2,810-3,020 feet, 654 bbls.; No. 10 Daugherty, 2,800-3,000 feet, shot, 1,173 feet. Magnolia Petroleum Co. No. 35 Walton, 2,797-2,985 feet, shot, 720 bbls. Richardson Oils, Inc. No. 1 Brashara, 3,357-3,450 feet, shot, 98 bbls. Bert Fields No. 2 Pure-Cowden, 2,829-3,000 feet, shot, 981 bbls. Navarro Oil Co. No. 2 Crenshaw, 2,715-3,146 feet, shot, 1,023 bbls.

## NORTH TEXAS COMPLETIONS

### Archer County

Bridwell Oil Co. No. 1 L. F. Wilson E, 2,232 feet, dry. L. T. Burns No. 1 Carpenter, 1,046-55 feet, 250 bbls.; No. 2 Carpenter, 1,038-46 feet, 100 bbls.; No. 4 Carpenter, 1,063 feet, dry; No. 3 Lowry, 1,500 feet, dry; No. 1 McCracken, 1,322 feet, dry. Consolidated Oil Co. No. 11 Portwood, 1,447 feet, dry. Deep Oil Dev. Co. No. 18 Wilson, 2,187-2,210 feet, 150 bbls.; W. W. Houston No. 1 Foucher, 481 feet, dry. C. B. Long No. 14 J. H. Turbeville, 1,496-1,520 feet, 25 bbls. Luggenheim and others No. 1 Waggoner, 1,718 feet, dry. Regal Oil Co. No. 4 L. F. Wilson B, 927 feet, dry. Shappell Oil Co. No. 1 J. Conner, 1,127 feet, dry. Solo Oil Co. and others No. 1 Lauster, 1,173 feet, dry. Tautenhahon and others No. 1 Charles Carson, 666 feet, dry.; No. 2 Charles Carson, 904 feet, dry. T. L. Wheeler No. 1 Longley, 999 feet, dry.

### Clay County

Texas Co. No. 1 Stephenson, 230-38 feet, 5 bbls.

### Cooke County

Anderson & Kerr No. 1 Blagg, 2,057 feet, dry; No. 2 Blagg, 2,030 feet, dry; No. 2 Bruhlmeyer A,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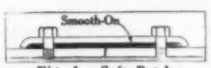


Fig. 1. Soft Patch

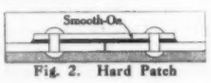


Fig. 2. Hard Patch

*Soft patch:*—The plate is curved at the edges to hold Smooth-On No. 1 or No. 3, and is held by tap or through bolts (Fig. 1). Under small patches use Smooth-On No. 1 mixed with water, quick setting. Under large patches use Smooth-On No. 3 made as stiff as it can be worked by adding dry Smooth-On No. 1 to the Smooth-On No. 3. Slow setting. *Hard patch:*—The plate of a hard patch fits the surface closely and is held by rivets (Fig. 2). To insure tight contact and to prevent leakage, coat the plate with Smooth-On No. 3 before it is riveted into place. *Forcing Smooth-On under patch:*—To make new or old patches tight, drill and tap a hole in the patch to connect a force pump or grease gun (Fig. 3). Pump Smooth-On No. 3 into the patch, and plug the hole. The force pump can be made from pipe fittings, or a grease gun with large discharge opening may be used.

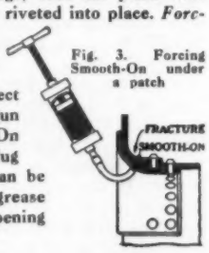


Fig. 3. Forcing Smooth-On under a patch

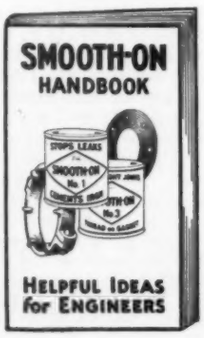
Fig. 4

LEAKS IN WATER LEGS

The seam is cleaned and Smooth-On No. 2 mixed with water to form a stiff putty is forced into the leaking seam (Fig. 4).

RUSTED-OUT STAY BOLTS

Replace with a threaded rod. Use nuts and washers on both sides of the boiler shell, and Smooth-On No. 1 on washers and under nuts.




*The Smooth-On Handbook explains additional boiler repairs, including leakage at seams, rivets, flanges, threads, etc. Mail the coupon for your copy and get Smooth-On in 1 or 5-lb. can or larger keg, from your supply house or from us.*

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2,114 feet, dry; No. 4 Rose, 1,944-53 feet, 100 bbls. Denver P. & R. Co. No. 6 Ed Wilson, 2,003-16 feet, 225 bbls. Dove Oil Co. No. 2 Carr, 1,936-63 feet, 25 bbls. F. W. Merrick, Inc., No. 31 Knabe, 797-812 feet, 5 bbls. Mildred Oil Co. No. 1 F. C. Owen, 1,927-45 feet, 60 bbls. J. C. Shaffer No. 3 A. Towery, 2,090-2,106 feet, 225 bbls. Whitfield and others No. 4 Owen, 1,913-33 feet, 250 bbls; No. 2 Owen, 1,921-70 feet, 25 bbls. Vindicator Oil Co. No. 9 J. Walterscheid, 774-98 feet, 15 bbls.

### Jack County

Cordova Union Oil Co. No. 1 L. J. Hester, 2,986-3,007 feet, 175 bbls. Gillispie and others No. 1 B. F. Rankin, 2,973-95 feet, 600 bbls. Hamilton Pet. Co. No. 2 Rhodes, 2,360-65 feet, 600 bbls.

### Montague County

Bridwell Oil Co. No. 2 J. S. Dennis, 954 feet, dry.

### Wichita County

G. W. Cooper No. 42 Waggoner, 1,763-70 feet, 175 bbls.; No. 14 Waggoner C, 1,567-1,651 feet, 25 bbls. F. P. Cullum No. 1 Waggoner, 681 feet, dry. Hunton Oil Corp. No. 16 Waggoner C, 1,678-85 feet, 70 bbls. J. M. Morton No. 1 Hausler, 3,145 feet, dry. Pois & Schulz No. 2 Foster, 1,270-80 feet, 75 bbls. Mrs. J. L. Pyle No. 3 Munger, 1,100 feet, dry; No. 4 Pyle, 1,091-93 feet, 10 bbls. Rathke Oil Co. No. 1 Cook, 1,805 feet, dry. A. M. Rowe No. 7 Waggoner, 1,303-13 feet, 55 bbls.

### Wilbarger County

F. A. Lain No. 1 Coffee, 3,505 feet, dry.

### Young County

S. S. Alexander No. 4 Howard, 903-18 feet, 200 bbls. L. T. Burns No. 7 Rushing, 897-906 feet, 100 bbls. Fresno Oil Co. No. 6 Cox, 587-93 feet, 10 bbls. G. E. Grininger No. 2 N. Prideaux, 760 feet, dry. J. Kleiner No. 16 Graham, 724 feet, dry. C. E. Knox No. 1 W. P. Stephens, 4,050-4,100 feet, 230 bbls. Rathke Oil Co. No. 2 Hill, 3,941-4,009 feet, 275 bbls. Schmidt and others No. 4 Casey, 905 feet, dry. Simmons No. 2 Stratton, 541 feet, dry. Underwood & Campbell No. 24 Campbell, 858-905 feet, 35 bbls.

## Kansas Fields

*(Continued from Page 82)*

Roth & Faurot and others No. 1-A King, C NE SW section 17-24-4, was rigging up machine. Pryor & Lockhart and others No. 4 Gunther, SW SW NE section 29-26-7, was drilling at 630 feet.

### Greenwood County

Landon & Parrish No. 2 Johnson, NE SE SE section 16-24-12, was the only Greenwood County completion. It had sand at 1,505-25 feet; drilled to 1,690 feet; plugged back to sand and pumped 8 bbls. of oil in 24 hours.

Estes and others No. 1 Edgar, NW NW SE section 1-28-8, an old well, was deepened from 1,030 feet to 1,250 feet; skidded rig, set 12-inch pipe at 440 feet and was shut down.

### Woodson County

Elbar Corp. No. 3 Opperman, SW NE NE section 27-23-14, Woodson County, pumped 140 bbls. of oil after treatment with 3,000 gallons of acid and was completed in pay at 1,638-45 feet, total depth. Top of Mississippi lime was 1,630 feet.

Aikman & Young No. 1-A Reed, SW NW SE section 26-23-14, had lime at 1,610-22 feet, total depth; was acidized, pumped 10 bbls. of oil in 24 hours and was completed.

First reports were made of two wells in Woodson County. Bell & Alexander No. 2 Kash, SW NW NW section 26-23-14, and Elbar Corp. No. 4 Opperman, SW NE NE section 27-23-14, were moving in machines.

### Sumner County

Slick and others No. 3 Murphy, SE cor. section 32-31-1w, Sumner County, topped Chat at 3,640 feet; total depth, 3,651 feet; made potential of 2,154 bbls. of oil, failed to improve production by acidizing and was completed.

C. Davis and others No. 1 Hawkins, NE NW NE section 1-32-2, the only new well in Sumner County, was rigging up machine.

### Cowley County

Trees Oil Co. No. 3 Littell, C W half NE section 19-30-4, Cowley County, topped Bartlesville sand at 2,860 feet; total depth, 2,890 feet. It was shot with 60 quarts, swabbed 247 bbls. of oil and was completed.

Dixon Fagerberg No. 1 fee, NE NW NW section 4-30-8, the only new Cowley County operation, was rigging up machine.

### Coffey County

Aikman & Braden No. 1 Scott, SW cor. section 13-23-14, Coffey County, had lime at 1,587-1,630 feet, total depth; plugged back to 1,627 feet; acidized with 2,800 gallons, pumped 50 bbls. of oil and 10 bbls. of water, and was completed.

The only new Coffey County work reported was at Aikman & Braden No. 2 Scott, NW NW SW section 13-23-14, set 10-inch casing at 768 feet and was drilling at 1,000 feet.

### Three Wildcats

In Rooks County, Graham and others No. 1 Fike, SW cor. section 9-9-17w, wildcat, was a rotary rig.

In Sedgwick County, Cameron and others No. 1 Smith, SW SE SE section 13-27-2, wildcat, was moving in material.

In Scott County, C. R. Blackman and others No. 1 Nolan, NW NW NE section 13-19-33w, was a location.

Frank C. Whitmore, dean of the School of Chemistry and Physics of Pennsylvania State College, has been awarded the William H. Nichols medal of the New York section of the American Chemical Society for 1937. The honor, founded in 1902 to "stimulate original research in chemistry," goes to Dean Whitmore "for his studies in metallo-organic compounds, especially those of mercury, and in the field of alophatic chemistry, particularly in molecular rearrangements and in the polymerization of olefins," according to the citation. Presentation of the medal will take place at a meeting of the New York section on March 5, 1937.


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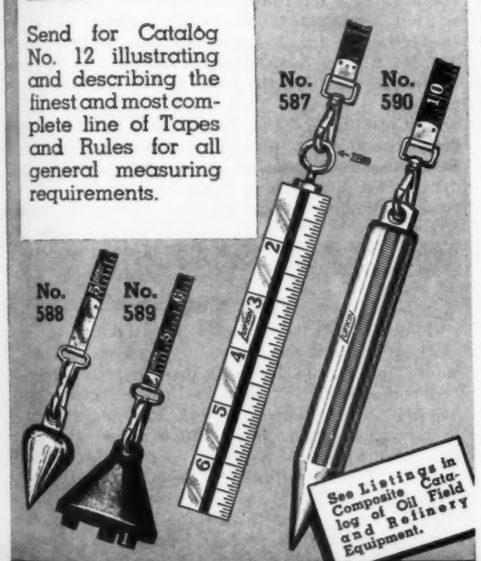


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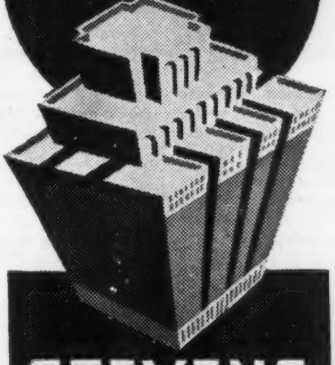


STEVENS HOTEL CHICAGO

# Southwest Texas District

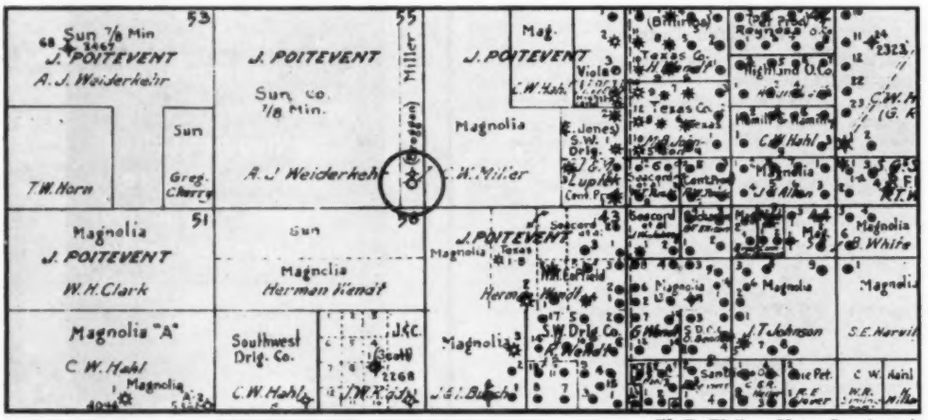
By GEORGE WEBER

# THREE POOLS ARE EXTENDED; SOME WILDCATS DISAPPOINT

HOUSTON, Tex., Nov. 2.—Indicated new production in Atascosa County; a possible mile extension to the Government Wells field in Duval County; an 8,000-foot extension of gas production in the Bentonville field and shows of production in a White Point deep test and Saxet outpost test shared the interest in developments of the week in Southwest Texas. A number of wildcats were abandoned and several new tests got under way during the week. The Colmena field received setbacks from two abandonments defining production, and the Foley field of Bee County received a new producer but was also defined by a dry hole.

Flour Bluff held the attention of the industry in the Lower Coastal area with four tests on the sand of the new field. Saxet and Saxet Heights saw little change in drilling activity. Plymouth received a limit on the south with the abandonment of a deep test. The Laredo district operations were hampered by general rains, but a number of completions were made in the Lopez, O'Hern, Haynes, Seven Sisters and Loma Novia fields of Webb, Duval and Zapata counties.

Atascosa County has in the past few days received more drilling activity than that area has seen for a long while. One of the first of the current tests, Rogers & Rogers No. 1 McLain is set on sand and completion for a discovery well will be attempted early in the coming week. The test, located about 4½ miles south of the Somerset field, cored sandy shale with some oil saturation at 1,510-1,638 feet. Saturated oil sand was cored at 1,638-75 feet. Operators have set casing at 1,510 feet and will drill plugs today, it is expected. Three other tests are drilling or getting under way in the county, which is following in the general increase of activity in the Fault Line zone.




—W. R. Walker, Maps, San Antonio.

*Illinois Petroleum Co. No. 1 Miller, completed last week for a wet gasser extends production in the lower, or Loma Novia sand nearly a mile o the west of the Government Wells field. There is a possibility that it will eventually become an oil producer*

## Government Wells Extension

The completion of Illinois Petroleum Co. No. 1 Miller for a wet gasser in Survey 55 constitutes a westward extension to the Government Wells field approximating 1 mile. The test cored sand at 2,335-51 feet, the lower sand recently opened to production on the west edge of the field by Magnolia Petroleum Co. Although the gasser was making only distillate at the latest report, it was still cleaning, and may eventually produce some oil.

The Government Wells field is seeing a revival in drilling activity, due mainly to the opening of production in the Loma Novia sand on the western edge of the field.

Two failures defined production in the Colmena field of Duval County during the week. The Conservative Oil Co. No. 4 Duval Ranch tested gas and salt water at 1,544 feet and was abandoned at that depth. The outpost test, Hooper Rutherford, Inc. No. 1 Duval Ranch, located about 1½ miles west of the field, tested salt water in the sand at 2,204-07½ feet and was abandoned after drilling to 2,500 feet.

A test north of the Seven Sisters field also failed to find production. It was the G. G. Grimes No. 1 Sling, located in Survey 116. In Seven Sisters proper, a slight southwestward extension was made to production with completion of Illinois Petroleum Co. No. 1 Welder. The test, located in Survey 102, gauged 150 bbls. per day at total depth of 2,512 feet. Elsewhere in the field six new producers and a gasser were completed during the week.

The Lopez field continued very active with six new producers as a result of the week's drilling. Wells in this field are drilled in a relatively short time, due to the shallow producing horizon and ease of digging. Four producers were added to the O'Hern field during the week.

## Zapata County Busy

Zapata County is the scene of considerable drilling, as rigs move into the Escobas field, and activity continues in the shallow Haynes field. Five producers were added to Haynes production, and Escobas gained one new well as three rigs move onto new tests.

Gas production was believed extended approximately 1½ miles to the southwest in the Bentonville field of Jim Wells County, as Tom Graham brought in No. 1 Luby for a gasser. The test has been attracting attention for several days with shows of oil and gas. Sand with a show of oil was cored at 5,418 to 5,423 feet, but repeated drill stem tests failed because of soft seats. Casing was set on this sand, after which it was perforated in an upper sand at 4,026-31 feet for gas production. Rock pressure was gauged at about 1,700 pounds.

White Point, an old gas field on the edge of Nueces Bay in southern San Patricio County, came into the picture again during the week with a show of oil in Earl Calloway No. 1 White Point Development Co. After failing to complete in sand at 4,856-64 feet which showed considerable oil, the test was plugged back and whipstocked out at 3,600 feet. The sand cored in the sidetracked hole at 4,900-11 feet is showing oil and no water after some swabbing.

Indicated extension to the 4,500-foot sand in the Saxet field of Nueces County was seen in the W. A. R. Oil Co. No. 1 Hoelscher. The test, located 4,000 feet east of production in that sand, tested 3 fourbles of oil in five minutes at 4,571-74 feet and operators cored deeper to 4,581 feet.

## Saxet Heights

Several tests are drilling below present production horizons in the Saxet area. Howell & Hawkins abandoned the No. 1 Page Brothers during the week at a total depth of 6,809 feet when sand at that level tested salt water. Houston Oil Co. is drilling in the No. 2-A fee below 6,324 feet. The No. 2-A fee is an offset to the most northernly Frio producer in the field, and tested salt water in that sand at 5,825-32 feet. Southern Minerals Corp. carried the No. 17 Bliss to 6,100 feet before completing through perforations in the Frio sand at 5,800 feet. The same company is drilling No. 1 Till below 6,200 feet and the 4,800-foot production aren. Between the Saxet and Saxet Heights fields Barnsdall Oil Co. No. 1 Weil is coring below 7,000 feet having encountered no shows.

## Flour Bluff

Flour Bluff, the recently discovered field in southern Nueces County lying between Laguna Madre and Cayo del Oso, is due for considerable development shortly. Four tests being drilled in the field by the Humble Oil & Refining Co. are on the sand, having been drilled simultaneously. No. 1 Edwards is set on the sand at 6,657 feet. No. 1 Phillips is testing at 6,636-60 feet and No. 1 Rankin & Oliphant has casing set at 6,662 feet. No. 1 Robertson, first to core the sand, was taken to the water sand at 6,680 feet and casing is now set. During the week, Gem Oil Co. No. 2 Smith, the fifth producer in the field, was brought in for an initial production of 141 bbls. per day on a one-eighth inch choke. The sand in this test was cored at 6,654-60 feet.

## Plymouth Further Defined

Plymouth, the largest field in San Patricio County, was again defined on the south with the abandonment of Magnolia Petroleum Co. No. 9 Corpus Christi Land Bank in the Hunter Survey. The test was drilled to sand at 6,632-38 feet and abandoned after it tested 2,430 feet of salt water.

## More Wildcatting

Wildcatting took a spurt in several localities of Southwest Texas last week. In Nueces County, three important tests spudded in during the week. All three are southwest of Corpus Christi. San Patricio County has only one active wildcat at present; the Eleanor Oil Co. No. 1 Kline, which has tested salt water in sand from 6,297-6,380 feet. Jim Hogg, Duval, Webb and Brooks counties, have added a number of new tests recently, and an important wildcat is getting under way in Goliad County. The latter is Sun Oil Co. No. 1 Fromme, on a trend with the recent discovery well of the Weser field, California Co. No. 1 Langrebe.

## Michigan Fields

*(Continued from Page 70)*

the shallow gas in the No. 1 Edward Siefert, C NE NE section 15, same township.

### Mecosta County

Mecosta County contributed the largest new gasser in the Tri-Townships field in several weeks when the Stewart-Atha, Inc. No. 4 Amsden, C SW SE section 31-13n-7w, Millbrook Township, made 45,000,000 feet daily topping the Michigan Stray at 1,279 feet and drilling to 1,321 feet. It was an edge well on the west side of the big field and immediately resulted in two new locations to the west.

Columbia Oil & Gas Co. also brought in a 500,000-foot well, the No. 3 Swett, C NE SW section 25-13n-8w, Hinton Township, topping Michigan Stray pay sands at 1,312½ feet and completing at 1,316 feet.

Mitchell Oil & Gas Co. struck a dry hole in the No. 2 Mitchell, C SW NE section 27-13n-10w, Aetna Township, same county.

### Montcalm Gas

Hyat-Norton No. 1 Dawes and Orr Estate well struck a flow of 1,500,000 feet of gas in the Michogan Stray sands about 18 feet in the pay and was expected to increase before completion. Rex Oil & Gas Co. also was nearing completion of a gas test, the No. 2 Bank of Detroit, C NW NE section 6, Belvidere Township, Montcalm County. The Dawes-Orr well is located C SW SE section 9-12n-7w, Belvidere Township.

### Wildcat Dusters

Terry Dale Michigan Corp. plugged and abandoned one of the deeper tests in the state at 4,553 feet, the No. 1 Tew, SW SW NE section 12-6n-7w, Berlin Township, Ionia County, while James H. Barton No. 1 Mosser, NE NE NW section 19-6n-5w, Portland Township, was reported dry in the Dundee.

### Western Michigan

An extension test about a mile north of the old Muskegon field failed to strike production in the Traverse or Dundee formations in John Stonert No. 1 Jacob Drost, SW SE SW section 34-11n-16w, Dalton Township, Muskegon County. Dundee was topped about 2,115 feet and operations shut down at 2,142 feet.

Muskegon Development Co. topped the Upper Traverse limestone at 1,665 feet in the Michigan Exploration Corp. No. 1 Veltman, SW SW NE section 20-9n-16w, Norton Township wildcat, reported running about 40 feet higher than the nearest previous test about 1½ miles to the east. Bottom water was first encountered at 1,670 feet and about 200 feet of water in the hole at 1,680 feet as drillers continued to the Dundee.

Two new Berea gas tests, one of which may be drilled to the oil formations, had been started in Ravenna Township where a new Berea gas field covering about 1,200 acres recently was opened and to which West Michigan Consumers Co. is laying a $50,000 6-inch welded pipe line.

J. B. Northcutt reported a 40-foot show of oil in the No. 2 Pinder, SW NW NW section 31-14n-16w, Elbridge Township, Oceana County, after a nitroglycerin shot.

### Wildcats

Charles Van Keuren and Keith B. Montigel, Trustees, had reached a depth of 1,450 feet nearing St. Peters in the Hiawatha Sportsmen Club and others No. 1, NE NE SW section 17-44n-9w, Garfield Township, Mackinac County. If unsuccessful in the lower formation it will be plugged back to test a show in the Trenton between 1,150 feet and 1,190 feet which was shot but not thoroughly tested.

### New Locations

A new west Michigan wildcat is the Norton Township test already mentioned in this report. Marquette River Oil Co. took out a permit for the No. 1 Nimbarger, SW NE SW section 27-13n-9w, Deerfield Township, Mecosta County, about 3 miles southeast of a previous oil test which struck a show but failed to develop commercial production in a county so far restricted to gas output.

A new northern Michigan test will be drilled by the North Michigan Land and Oil Corp., of Grayling, as the No. 2 Hartwick Trustee, NE NW NW section 31-24n-4w, Lyon Township, Roscommon County, where three shallow tests were drilled last year.

Both the Norton Township and Roscommon areas were considered likely prospects for oil or gas development by Robert B. Newcombe, former assistant state geologist, in his book, "Oil and Gas Fields of Michigan," published several years ago.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**Mr. James L. Sullivan**

*have this day been admitted to our firm as General Partners*

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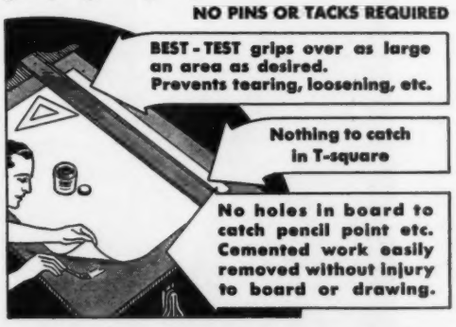
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# Canadian Fields

## Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Oct. 31.—On the west side of the South Turner Valley structure, Sovereign Royalties No. 1 Myers & Wright, LSD 14, section 21-18-2w5, is below 5,954 feet after getting the Madison lime at 5,792 feet. It got strong gas shows at the contact and 35 feet in the lime, with additional lower shows and strong shows of light crude. The drill is working in alternate porous and very hard bands of limestone. It is estimated a small commercial producer but will be deepened to the main porous horizon. The test, started by Myers & Wright, is being completed by Mack & Tims of Calgary.

Renfrew Royalties No. 1 Morris & Goodfellow, LSD 3, section 28-18-2w5, is below 6,365 feet, more than 355 feet in the Madison lime with the main porous horizon expected around 6,410 feet.

Increased wet gas showings were met just below 350 feet in the lime. The naphtha was on the crude side, indicating prospects of light crude lower in the lime. Location is a little less than a mile south and east of Turner Valley Royalties No. 1 crude producer. It is expected to be the next completion in South Turner Valley.

Foundation Royalties No. 1, LSD 5, section 21-18-2w5, the most westerly drilling test in the southern extension of the field, which got the limestone at 6,018 feet, has resumed after cementing 6-inch casing at 6,039 feet. Located 1¾ miles south of Turner Valley Royalties No. 1, the Foundation well is probably the most interesting test in the field. It has proven the lime south and west of the producing area, and if crude production is secured, it will very likely prove a major oil field. Rotary tools are being used, and the well will likely be completed some time in November.

### West Side Tests

Among the newer wells on the west side of the structure, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, is below 2,049 feet. It is the farthest north of the west side tests, about 6 miles north and over a mile east of Turner Valley Royalties No. 1, and located in bush country which was formerly considered almost worthless from an oil standpoint. In section 33-18-2w5, Sterling Pacific No. 3, LSD 13, is below 5,843 feet. Sterling Pacific No. 4, LSD 4, same section, is below 3,677 feet.

In section 28-18-2w5, B. & B. Co. No. 1, LSD 12, is below 3,930 feet. Central Royalties No. 1, LSD 14, section 28-18-2w5, formerly Sunburst-Mid Royal No. 1, has resumed from 1,661 feet and is deepening below 2,000 feet. Completion of the well is being financed by W. Fay Becker and associates of Calgary with Roy Widney in charge. The test offsets Turner Valley Royalties No. 1 crude producer to the southeast and Century Royalties No. 1 naphtha producer to the south. Richfield Royalties No. 1, LSD 5, same section, has finished rigging and will resume from 4,010 feet as soon as Renfrew Royalties No. 1 is completed. Development is financed by the Becker interests, with Roy Widney in charge of drilling.

In section 21-18-2w5, Newfold Royalties No. 1, LSD 11, immediately south of Sovereign No. 1, is below 1,940 feet. West Side Royalties No. 1, LSD 3, is below 3,085 feet.

West of section 28-18-2w5, Madison Oils, Ltd., of Calgary is arranging for a test of its reinstated acreage in LSD 2, section 29-18-2w5. The holdings are about a half mile due west of the Renfrew Royalties well in LSD 3, section 28-18-2w5. John McCaffrey is president and George T. Wright and Dr. E. H. Simmons are directors of the Madison company.

### South Turner Valley

In section 28-18-2w5, South Turner Valley, British Dominion Oil & Development Corp. No. 4, LSD 6, bottoming at 6,423 feet, has cleaned out after a shot of 400 quarts in the lime. Before the shot the well with 650 pounds pressure gave naphtha recovery of around 80 bbls. a day. Pressure was reduced to 450 pounds increasing the flow to 90 bbls. Since cleaning, the same pressure has given 150 bbls. daily, and it is now testing with 650 pounds.

### Tests in Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-31-10w5, rotary test is below 6,566 feet with increased oil and gas shows. Heavier mud is being used to control gas pressure, and a Zublin rotary bit has been secured for the final drilling.

On the Kootenay dome west of Calgary, Roxana Petroleum Co. No. 1 is preparing to drill into production after cementing in the top of the lime at 970 feet. On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, is below 4,660 feet and adding a second shift. On the Moose dome, Moose Oils No. 2, LSD 8, section 29-22-6w5, has resumed in the Banff shales at 695 feet after a fishing job.

On the Highwood-Sinclair structure southwest of Turner Valley, Maple Leaf Royalties No. 1 Banner, LSD 6, section 34-17-3w5, is below 2,230 feet and carrying casing behind the tools.

### High River-Aldersyde

In the High River area east of Turner Valley, Arca Development Corp. No. 1, NW section 24-18-1w5, is below 7,238 feet. It is the deepest test now drilling in western Canada.

On the Aldersyde structure, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w, is in exceedingly hard formation at about 6,900 feet.

On the New Valley structure, northeast of Turner Valley, McLeod Oil Co. No. 1, LSD 4, section 6-21-2w5, is below 6,440 feet and running three tours.

### Border Fields

On the Del Bonita structure south of Lethbridge, Sunshine Oils No. 1, LSD 10, section 19-1-21w4, is below 4,837 feet, in the shale band between the upper and lower Sunburst sands. Cores taken from the Sunburst showed both oil and gas, and control head has been installed to handle the gas flow.

On the Twin River structure, Del Bonita Associated Oils No. 1 Rosenburg, LSD 9, section 10-2-20w4, has resumed and is below 1,000 feet.

In the Taber district, Plains Petroleum No. 1, LSD 13-14, section 29-9-17w4, on the Majestic structure, is below 1,000 feet after encountering a strong flow of artesian water. Casing is being pulled from the abandoned Cole-Hunter well, 2 miles farther northwest.

### Spring Coulee Test

In the Spring Coulee district, southern Alberta, interests associated with the Terminal Oil Co. of Los Angeles are preparing for a deep test tentatively located in N half section 36-3-23w4. An agreement was recently made between O. F. Malmberg of the Malmberg ranch at Spring Coulee and David Cohn of Olympia, Wash., regarding development. It is understood Terminal Oil Co. will have control of the development program, with S. M. Zandmer in charge of drilling operations. A steel derrick is being shipped from Calgary. The Spring Coulee structure is 13 miles north of Del Bonita.

### Wainwright Field

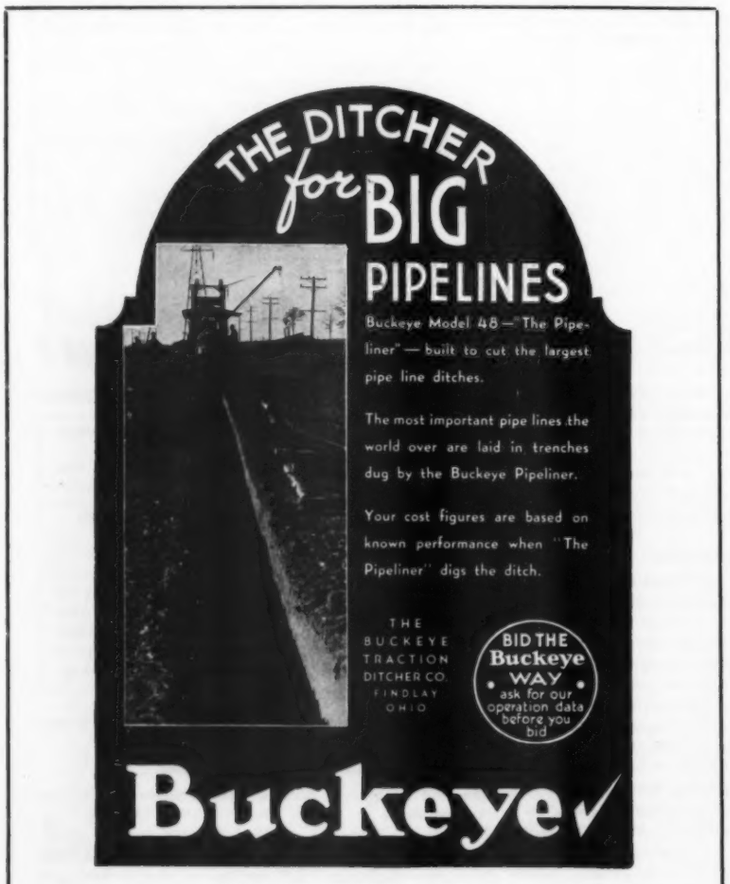
In the Wainwright field, east-central Alberta, Pacalta Oils, Ltd., and Vanalta, Ltd., of Vancouver, British Columbia, are erecting steel derrick for a diamond drill test on the Battleview anticline north of Wainwright. Salter & Lund have the contract.

### Ontario Drilling

In the Dawn field, Lambton County, Ontario, Union Gas Co. No. 85, Lot 25, Concession 2, Dawn Township, finished at 1,685 feet as a very large gasser with open flow in excess of 10,000,000 feet a day. The well is northeast of Union No. 59, which was the largest gasser in the field. Union No. 86, Lot 30, Concession 5, Sombra Township, is below 550 feet after setting casing on the lime at 470 feet. Union No. 84, Lot 25, Concession 2, Dawn Township, finished a dry hole at 2,074 feet. Union No. 87 has been spotted in NW cor. E half Lot 24, Concession 4, Dawn Township.

In Chatham Township, Kent County, Union Gas Co. No. 5, SE quarter Lot 2, Concession 12, is below 1,300 feet. Farther south, Ogletree Syndicate No. 2, Lot 13, Concession 5, is below 1,175 feet.

In the Valetta section of the old Tilbury field, Walker & Drake No. 2, Moffatt farm, SE quarter Lot 6, Concession 9, Tilbury East Township, which started flowing about 500 bbls. a day after acidizing, has settled to about 50 bbls. a day pumping production. Walker & Drake No. 2 Armstrong farm, Lot 5, Concession 9, is rigging.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# Central West

## Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Nov. 2.—A wildcat test which is reported to have produced briefly at the rate of 200 bbls. per hour was the outstanding feature in the Kentucky fields this past week. This test was drilled about 10 miles northwest of the old Wayne County pool, on the Wilson Cooper farm, near Monticello, in Wayne County. The well was shut in to await the completion of a pipe line from a Monticello pumping station to this new producer. L. L. Smith, R. J. Geiger and J. T. Wilson, the operators who drilled this test, are planning extensive work in this area and it is reported that all land in that vicinity is under lease and other operators are moving rigs on locations in that section. Wells drilled previously in this county, which is located at an extreme point on the northeastern flank of the Nashville dome and directly southeast of the saddle of the Cincinnati anticline, did not maintain their initial, or flush, production more than a few days, and some of them have been known to play out very quickly, so little can be said of this well until it has had an opportunity of proving itself by a longer production test than it was given at first.

The Livermore pool in western Kentucky continues to be the scene of much activity and six new wells were reported in that district in the past seven days. Dan McQueen completed a 100-bbl. well on the Cox heirs property, in the town limits of Livermore, in McLean County. Sunflower Oil & Gas Co. No. 1 Lula Cox, in the same section, produced 45 bbls. the first 24 hours after a shot. On the Davis lot, the Livermore Oil Co. No. 1 had an initial production of 25 bbls. J. B. Mayer & Co. No. 10 C. C. Crowe, outside of Livermore, started at 30 bbls. a day. On the R. A. Rowan town lot, Troy Refining Co. No. 2 produced 100 bbls. the first 24 hours after shot. W. E. Hupp & Co.'s test on the Cook farm, outside of Livermore, was a dry hole.

In Ohio County three small producers and three dry holes were completed in the Dundee pool. Petroleum Exploration Co. completed Nos. 11 and 12, on the R. and H. Graham farm. Both had an initial production of 20 bbls. Henry Schol No. 5 J. R. Mosley, in the same pool, was a dry hole and Kelley & Co. No. 2 Lon Ralph was also a "duster." The Kentucky Natural Gas Co. completed a 10-bbl. well on the Alex Whitehouse farm and the same company's No. 4 F. M. Sandrue was a dry hole.

### LIMA FIELD

There were no completions reported in the Lima field and there has been a general decline in activity in this district. It is reported that local operators are considering redrilling in the old Klondike pool, in East Toledo, Lucas County, but so far no actual work has been started. The only mark that recalls this field is the Klondike well, the discovery well, which after 40 years still produces about 100 bbls. a month. In Sylvania Township, same county, Elmer A. Roth & Co.'s test on the France Stone Co. property has been shut down for casing.

In Allen County, section 9, Amanda Township, Davis & Jones is drilling No. 3 on the Charles C. Post property. In Bath Township, Ira B. Post has abandoned four old producers on the Landis farm, in section 2.

L. E. Harpster is drilling No. 2 on the M. and N. Sandelbach farm in section 4, Hopewell Township, Sandusky County. In Rise Township, section 31, W. G. Montgomery & Co. is drilling No. 2 on the Noah Hetrick farm. The Zorn Hornung Co. abandoned seven old wells on the Kenan farm in section 19, Jackson Township, and six wells on the Rinebold farm in section 36, Scott Township. In section 21, same township, D. J. Bonawit has abandoned four old wells on the Ferriter property.

In Shelby County, section 15, Cynthian Township, Lorraine Oil & Gas Co. has abandoned six wells on the Danzig property and the Security Oil Corp. has abandoned nine old producers in Wood County.

### CENTRAL OHIO FIELD

The Central Ohio field is the scene of a decided increase in operations and many new locations have been staked in the past week. In Stark County, section 5, Jackson Township, East Ohio Gas Co. completed a large gas well on the Frank Halasz farm. It was drilled through the Clinton sand at 4,201-26 feet and gauged 2,457,000 feet of gas and had a rock pressure of 1,200 pounds. The same operator's No. 2 T. and J. Sorrick, in section 4, was abandoned as dry after failing to find the Clinton sand, and a rig is being built for No. 3. The East Ohio Gas Co. has also staked a location on the J. A. Rohr property in section 17. A short distance from this location the Ohio Fuel Gas Co. has staked a location on the E. P. Rohr farm in the same section. The Ohio Fuel Gas Co. has also staked location on the Newton Butler property in section 17, same township.

In Summit County, section 9, Twinsburg Township, Brooks Johnson No. 2 Stevenson & Pendergast was completed below the shale at 340-600 feet and gauged 492,000 feet of gas naturally. In section 36, Franklin Township, East Ohio Gas Co. is down 3,900 feet on the Charles Daily property.

Ohio Fuel Gas Co. completed a commercial gas well on the George Perko farm in section 16, Orange Township, Ashland County. It was completed below the Clinton at 2,603-15 feet. The same company's No. 1 R. E. Spahr, section 22, Mohican Township, was drilled through the Clinton at 2,813-21 feet, which was badly broken, and was abandoned as a dry hole. In section 14, Hanover Township, Ohio Fuel Gas Co. is building a rig for No. 2 on the J. M. Dorr property.

In Huron County, section 4, Hartland Township, McCorkill & Co. No. 1 Mary Park gauged 60,000 feet of gas in shale at 282-90 feet and is being drilled deeper.

In Portage County, section 13, Palmyra Township, Cashdollar & Co. is down 200 feet on a new test on the J. T. Henderson farm.

Ohio Fuel Gas Co. completed a commercial gas well on the Fred Walkden property, Lot 80, Columbia Township, Lorain County, and the same operators are moving a rig on the J. Stanislawski farm in Lot 99, Eaton Township. Ohio Fuel Gas Co. is also building a rig on the A. J. Schaefer farm in Lot 55, Grafton Township, and has staked location on the John Solet lease in section 21, Carlisle Township. Schneider & Wyles made a location on the C. and S. Fletcher farm in Lot 62, Columbia Township. In Avon Township, section 14, William Dempsey is rigged up on the Emma Baldauf farm and in section 21 Edson & Son is completing No. 2 Reuben Chester.

In Wayne County, section 26, Congress Township, Ohio Fuel Gas Co. No. 1 E. J. Carver was drilled through the Clinton at 3,097-3,109 feet and made a good show of gas and is to be shot. The same operators completed a small gas well in the Newburg formation on the D. E. Gearhart lease in section 6, Canaan Township. The Ohio Fuel Gas Co. has also staked a location on the Grace Johnson property for No. 2 in section 1, Clinton Township.

In Medina County, section 5, Chatham Township, Edson & Son No. 36 L. R. Wideman was drilled through the Clinton at 2,976-80 feet and made 18,000 feet of gas. It has been plugged back to the Berea and is being tested. In section 33, Brunswick Township, Ohio Fuel Gas Co. is spudding on the C. L. Benjamin property, and the same company is moving a rig on the Charles Ganyard property in Lot 47, Granger Township.

In Holmes County, section 28, Washington Township, Ohio Fuel Gas Co. No. 1 W. F. Fulmer was drilled through the Clinton at 2,778-2,810 feet without a show of oil or gas and has been abandoned. In the same township, section 17, same company has abandoned the No. 1 Barbara Young, which was a small gas well. The Ohio Fuel Gas Co. has staked three new locations for gas in this county: one on the Hannah Tidball farm in section 19, Monroe Township, one on the Burgess Bird property in section 20, and one in section 25, Richland Township, on the Louise Vernon lease.

Kuntz-Hulse, Inc., is building a rig on the E. L. McKee farm for No. 4 in section 17, Perry Township, Coshocton County. In section 16, Preston Oil Co. is spudding on the I. Underwood farm and in section 6 the same operators are moving a rig on the J. L. Myers property. In section 9, Tiverton Township, Ohio Fuel Gas Co. is rigged up on the Ora Black lease.

In Lawrence County, section 18, Union Township, Shale Development Co. has resumed drilling on the First Huntington National Bank property and is down 2,000 feet.

In Athens County, Fraction 5, Trimble Township, Ohio Fuel Gas Co. No. 140 Sunday Creek Coal Co. was drilled through Clinton sand at 3,879-3,917 feet to a total depth of 3,960 feet and has been abandoned as dry. The same operators completed a small gas well on the Hiram Thompson property, section 12, Bern Township. The well was completed in the Maxon sand at 953-75 feet. In Fraction 18, Lodi Township, Ohio Fuel Gas Co. No. 2 Cora Evans was completed in the second Berea at 1,577-90 feet and was a small gas well. The same company has staked a location on the Sadie Hawk lease in Fraction 23, and is rigged up for No. 4 on the State of Ohio property, section 16, same township. In Fraction 12, Lee Township, Albany Gas Co. No. 1 Ray Bailes has been shut down at 150 feet for repairs. In section 16, Rome Township, Williams Brothers are rigged up on the William Crippen property for No. 2, and Gibson & Co. has a rig up for No. 3 on the Fred Laughlin lease in the same section.

In Tuscarawas County, section 21, Clay Township, George Jewell No. 2 Frank Kinsey made 3,428 feet of gas in the Berea sand at 1,201-1,300 feet and is drilling deeper.

In Morgan County, Fraction 3, Penn Township, Kepple & Co. No. 9 Meda Smith lost tools at 860 feet and was plugged back to the Peeker sand at 405 feet, where they encountered a show of oil. The hole is being cleaned out after a shot and will probably make a small producer. In section 18, Marion Township, Ohio Fuel Gas Co. has staked a location on the George Lovell property and in Location 12 the same company is rigged up for No. 2 on the D. J. Phelps lease.

In Meigs County, section 1, Rutland Township, Barton & Utsinger No. 2 Dolph Hysell was completed below the Salt sand at 650-90 feet and gauged 356,000 feet of gas and had a rock pressure of 235 pounds.

Wehrle Brothers No. 4 Worley Beaver, section 2, Monroe Township, Perry County, was drilled through the Berea sand at 1,053-73 feet and gauged 184,000 feet of gas after a shot. In section 35, Coal Township, Preston Oil Co. No. 141 Sunday Creek Coal Co. property has been drilled 12 feet in the Clinton and has a very good show of oil. In Thorn Township, section 36, Wehrle Brothers No. 3 Alma Beard heirs was completed below the Clinton at 2,774-2,804 feet and gauged 2,000,000 feet of gas. In Hopewell Township, section 31, Hopewell Gas Co. is building a rig on the Earl Poorman property.

In Fairfield County, section 22, Berne Township, City Natural Gas Works No. 2 L. J. Knecht was drilled into the Clinton sand and made 125,000 feet of gas naturally and may be drilled deeper before being shot.

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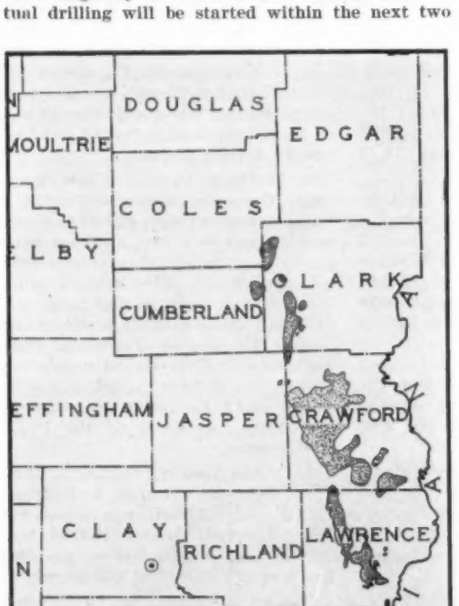
R. R. Jackson has been advanced from assistant superintendent to superintendent of the Magnolia Petroleum Co.'s refinery in Beaumont, Tex. He succeeds C. S. Dickinson, who will become superintendent of the company's Corsicana, Tex., refinery. Mr. Jackson will be succeeded by T. E. Schley, mechanical superintendent of the Beaumont plant. J. W. Folmar, plant superintendent at Corsicana, will become foreman of the Magnolia north plant at Beaumont.

# Pure Oil Co. Starts Campaign to Test Deep Sands in Illinois

By R. H. WHITNEY, Jr.

FINDLAY, Ohio, Nov. 2.—The first move toward actual development of the Illinois Basin area was made last week by the Pure Oil Co. with the moving of lumber and drilling equipment on its Location No. 1, on the George Bradley farm, in SW NW section 26-1n-7e, Bedford Township, Wayne County, 3 miles east and south of Cisne. Derrick will be erected 200 feet to the right of U. S. Highway No. 45 and it is believed that actual drilling will be started within the next two




*Approximate locations of Pure Oil Co. tests in Wayne and Clay counties in the Central Coal Basin of Illinois. These are the first of a large number of tests for deep pays in which a number of big oil companies will drill in the Basin.*

weeks. The Pure Oil Co. is also moving equipment on Location No. 2, on the Coen farm, SE SW SE section 33-3n-8e, Clay City Township, Clay County, 3 miles south and 1 mile east of Clay City. Both tests are located in the Pure Oil Co.'s 300,000-acre block, which starts in the center of Wayne County and extends into Clay, Jasper and Richland counties.

Although leasing and seismograph shooting have subsided in that area, there is still plenty of activity in the basin, leases are being filed daily and seismograph crews are active in Clay County, Marion County, Jefferson and Wayne counties, and in various other parts throughout the basin. The majority of major companies are obtaining leases under the names of individuals and this makes it next to impossible to give any accurate description of their holdings, although it may safely be stated that altogether they hold in excess of 3,000,000 acres.

The main play has been for the four highs mentioned in the Illinois State Survey and, as previously reported, the Carter Oil Co. got the jump on its competitors and leased these highs practically solid. The Louisville anticline, in Clay County, which from all appearances should be a prolific area, extends from a little north of Iola, south and east to Louisville and west almost to Oskaloosa. The center of this formation is thought to be in sections 13, 14, 23, 24 and 26 of Oskaloosa Township and in section 30 of Louisville Township, and the anticline as a whole covers an area somewhat larger than a township.

The Xenia high is located 6 miles east and north of Flora, Ill., and the heart of this formation is believed to be in all of section 23, the eastern half of section 22, the western half of section 24, the southern part of section 14 and in the northeastern part of section 26 of Stanford Township, in Clay County.

The Iola dome is located in Marion, Clay and Effingham counties and the center of this high is believed to be in the northwestern part of Clay County, in sections 6 and 7 of the Oskaloosa Township, and in the northeastern part of Marion County in sections 12 and 13, of Meacham Township. The Omega high is located in Marion County and the center of this dome is reported in the vicinity of sections 15 and 22, Omega Township.

A revival of drilling operations in the northeastern part of Jasper County, in Grandville Township, has been started and a 25-bbl. producer was completed in that district last week. This test was drilled on the William Freeland farm, 3 miles east and 1 mile north of Yale, by a group of Indiana operators, and extensive development is being planned for that area. This district was drilled with little success 25 years ago, when the old Casey pool was being developed and this new well is located only a short distance from a dry hole drilled at that time. Pay was struck at 669 feet, which shows the formations to be higher than was indicated by logs of previous wells. The presence of too much salt water, which made these earlier wells unprofitable, was not noticeable in this particular test.

Near Sparta, Ill., in Randolph County, Tilden Township, local operators are planning to test an oil-bearing sand, which was discovered while a water well was being drilled on the Red Horse ranch property, 6 miles north of Sparta. A good showing of oil and gas was made in this water well at the unusual depth of 30 feet and although it is very doubtful that oil and gas is present in commercial quantities, it is possible that pay might be found at a lower level as this well is only a short distance from a small gas field, discovered some years ago.

In Washington County, Covington Township, A. R. Fricke & Co. is completing a test on the Reinhardt property and in Okawville Township, operators are spudding on the Gus Borrenpohl farm, east of Venedy, Ill.

## FOUR SAFETY PLAQUES WON BY SHELL PETROLEUM

Shell Petroleum Corp. executives inspect safety trophies awarded by National Safety Council. Here are shown R. B. High, manager of the manufacturing department; H. Bloemgarten, vice president in charge of production; H. E. Hall, manager of service stations; R. E. Smith, manager of pipe lines, and W. F. Jones, personnel manager of the corporation.

# WILDCAT OPERATIONS

## CALIFORNIA

### IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

| Company, well and location: | S.T.R. | Depth | Status |
|---|---|---|---|
| Shell Oil Co., No. 16 Capitan, Santa Barbara Co. | 32- 5-30 | 2,360 | bailed dry |
| Shell Oil Co., No. 19 Capitan, Santa Barbara Co. | 32- 5-30 | 1,360 | sd. sh. drlg. |
| General Pet. Corp., No. 20 Capitan, Santa Barbara Co. | 32- 5-30 | 1,443 | cmtd. 1,442 |
| Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara | 15- 4-29 | 6,492 | P.B. 2,124 |
| Signal Oil Co., No. 8 Elwood, Santa Barbara Co. | tideland | 3,397 | sd. sh. drlg. |
| Bush Oil Co., No. 3 Santa Maria, Santa Barbara Co. | 30-10-33 | 2,064 | hd. sh. drlg. |
| Field Gasoline Corp., No. 1 Santa Maria, Santa Barbara | 21- 9-33 | 2,972 | sd. sh. drlg. |
| Apache Oil Co., No. 1 Santa Maria, Santa Barbara Co. | 31- 9-33 | 4,353 | hd. sh. drlg. |
| Macrate, A. N., No. 1 Santa Maria, Santa Barbara Co. | 23-10-34 | 1,597 | sd. sh. drlg. |
| Echo Oil Co., No. 1 Santa Maria, Santa Barbara Co. | 23-10-34 | 1,170 | sd. sh. drlg. |
| Union Oil Co., No. 11 Orcutt, Santa Barbara Co. | 26- 9-34 | 4,083 | pump. water |
| Union Oil Co., No. 12 Orcutt, Santa Barbara Co. | 26- 9-34 | 3,315 | will deepen |
| Union Oil Co., No. 16 Orcutt, Santa Barbara Co. | 26- 9-34 | 2,530 | sd. sh. drlg. |
| Todos Santos Oil Co., No. 1 Casmalia, Santa Barbara | 29- 9-34 | 2,364 | cmtd. 1,650 |
| Petrol Corp., No. 1 Los Alamos, Santa Barbara Co. | 9- 8-32 | 50 | tech. spud. |
| Moore, Inc., No. 1 Santa Maria, Santa Barbara Co. | 25-10-35 | 7,754 | gr. sh. drlg. |
| Top Row Oil Co., No. 1 Lompoc, Santa Barbara Co. | 10- 6-35 | 1,175 | cleaning out |
| Rio Grande Oil Co., No. 1 Mesa, Santa Barbara Co. | 28- 4-27 | 2,065 | O.S. drlg. |
| Calkan Pet. Co., No. 1 Sespe, Ventura Co. | 23- 5-20 | 493 | cmtd. 455 |
| Union Oil Co., No. 10 Bardsdale, Ventura Co. | 12- 3-30 | 6,561 | cleaning out |
| Merchants Pet. Co., No. 7 Sespe, Ventura Co. | 1- 4-20 | 231 | sd. sh. drlg. |
| Texas Co., No. 131 Shiells, Ventura Co. | 4- 3-19 | 4,161 | O.S. drlg. |
| El Rancho Oil Co., No. 1 Sespe, Ventura Co. | 9- 3-19 | 4,990 | cleaning out |
| Condor Oil Co., No. 1 Sespe, Ventura Co. | 6- 4-19 | 1,365 | cleaning out |
| Topa Topa Oil Co., No. 1 Sespe, Ventura Co. | 33- 5-19 | 2,205 | cleaning out |
| Wasibi Oil Co., No. 1 Sespe, Ventura Co. | 33- 5-19 | 1,000 | sd. sh. drlg. |
| Oil Ridge Oil Co., No. 1 Hopper Canyon, Ventura Co. | 6- 4-18 | 2,772 | cleaning out |
| Bolsa Chica Oil Co., No. 4 Temescal, Ventura Co. | 4- 4-18 | 3,339 | O.S. drlg. |
| Pacific Western Oil Co., No. 6 Temescal, Ventura Co. | 3- 4-18 | 1,920 | hd. sh. drlg. |
| Sunset Oil Co., No. 1 Temescal, Ventura Co. | 21- 4-18 | 3,260 | gr. sd. drlg. |
| Rennie Brothers, No. 1 Santa Paula, Ventura Co. | 21- 4-21 | 1,040 | rig. to pump |
| Munding, J. J., No. 1 Ojai, Ventura Co. | 22- 4-22 | 998 | br. sh. drlg. |
| Ventura Expl. Co., No. 1 Saticoy, Ventura Co. | 30- 3-22 | 9,525 | swab. water |
| Vaca Oil Co., No. 1 Oxnard, Ventura Co. | 5- 1-21 | 2,822 | tar sand |
| General Pet. Corp., No. 1 Padre Canyon, Ventura Co. | 15- 3-24 | 4,291 | hd. sh. drlg. |
| Continental Oil Co., No. 2 Padre Canyon, Ventura Co. | 15- 3-24 | 5,759 | P.B. 5,700 |
| Honolulu Oil Corp., No. 1 South Mountain, Ventura Co. | 23- 3-21 | 4,780 | gr. sd. drlg. |
| Associated Oil Co., No. 12 McGonigle, Ventura Co. | 23- 3-23 | 9,260 | hd. sd. drlg. |
| Associated Oil Co., No. 25 V.L.W. Ventura, Ventura Co. | 23- 3-23 | 6,760 | cleaning out |
| Associated Oil Co., No. 30 V.L.W. Ventura, Ventura Co. | 24- 3-23 | 6,742 | sd. sh. drlg. |
| Associated Oil Co., No. 28 Lloyd Ventura, Ventura Co. | 27- 3-23 | 4,855 | sd. sh. drlg. |
| Shell Oil Co., No. 88 Taylor Ventura, Ventura Co. | 30- 3-23 | 7,292 | sd. sh. drlg. |
| General Pet. Corp., No. 17 Barnard Ventura, Ventura | 23- 3-23 | 3,752 | sd. sh. drlg. |
| General Pet. Corp., No. 13 Notten Ventura, Ventura Co. | 23- 3-23 | 9,510 | redrlg. 9,498 |
| Jennings, E. P., No. 1 Alpaugh, Kern Co. | 4-24-23 | 2,151 | sd. sh. drlg. |
| Den Petroleum Co., No. 1 Devils Den, Kern Co. | 20-25-19 | 1,287 | redrlg. 1,190 |
| Associated Oil Co., No. 4 Lost Hills, Kern Co. | 1-26-20 | 5,904 | temp. sus. |
| Associated Oil Co., No. 6-L-3 Lost Hills, Kern Co. | 2-26-20 | 1,530 | fishing |
| Associated Oil Co., No. 12-A-3 Lost Hills, Kern Co. | 11-26-20 | 1,675 | idle |
| Lincoln Pet. Co., No. 2 Lost Hills, Kern Co. | 12-26-20 | 2,821 | sd. sh. drlg. |
| Texas Co., No. 1 Lost Hills, Kern Co. | 11-26-20 | 2,037 | P.B. 1,983 |
| East Puente Oil Co., No. 22 McKittrick, Kern Co. | 11-30-21 | 1,318 | bailing |
| Woodward, Hoke, No. 6 McKittrick, Kern Co. | 11-30-21 | 1,317 | cmtd. 960 |
| Bergman, H. L., No. 1 McKittrick, Kern Co. | 30-30-22 | 2,013 | P.B. 1,700 |
| General Pet. Co., No. 1 South Belridge, Kern Co. | 30-28-21 | 11,377 | suspended |
| Culbertson & Sipley, No. 1 Belridge, Kern Co. | 35-28-25 | 1,660 | rigged up |
| Associated Oil Co., No. 5 North Belridge, Kern Co. | 34-27-20 | 8,431 | cmtd. |
| Belridge Oil Co., No. 12-1 North Belridge, Kern Co. | 1-28-20 | 5,360 | sd. sh. drlg. |
| Belridge Oil Co., No. 15-35 North Belridge, Kern Co. | 35-27-20 | 4,961 | hd. sd. drlg. |
| Belridge Oil Co., No. 5-1 North Belridge, Kern Co. | 1-28-20 | 7,564 | hd. sh. drlg. |
| Continental Oil Co., No. 8 North Belridge, Kern Co. | 36-27-20 | 8,500 | flow. 4,732 |
| Shell Oil Co., No. 1 Antelope Plains, Kern Co. | 5-28-20 | 4,854 | P.B. 1,502 |
| Associated Oil Co., No. 21 Kern Front, Kern Co. | 23-28-27 | 1,990 | pump. 25 b.d. |
| National Oil Co., No. 1 Kern Front, Kern Co. | 11-28-27 | 1,740 | C.S. drlg. |
| National Oil Co., No. 4 Kern Front, Kern Co. | 11-28-27 | 1,848 | cmtd. 1,708 |
| Honolulu Oil Corp., No. 49 Kern Front, Kern Co. | 8-28-27 | 2,692 | sd. sh. drlg. |
| Pan American, No. 25 fee Kern Front, Kern Co. | 22-28-27 | 2,290 | deepening |
| McDonald & Dearin, No. 3 Kern Front, Kern Co. | 11-28-27 | 2,082 | sd. sh. drlg. |
| American Expl. Co., No. 2 Kern Front, Kern Co. | 16-28-27 | 751 | sd. sh. drlg. |
| Italo Pet. Corp., No. 34 Kern Front, Kern Co. | 16-28-27 | 2,885 | sd. sh. drlg. |
| Trico Oil & Gas Co., No. 1 Kern Front, Kern Co. | 36-28-27 | 3,154 | resume work |
| Kaime, A. M., No. 1 Kern Front, Kern Co. | 17-28-27 | 1,652 | sd. sh. drlg. |
| General Pet. Corp., No. 38 Kern Front, Kern Co. | 14-28-27 | 1,950 | rig. to pump |
| Kaar, Charles, No. 1 Kern Front, Kern Co. | 26-28-27 | 2,250 | pump. water |
| Bell Corp., No. 3 McVan, Kern Co. | 14-27-27 | 15 | tech. spud. |
| Harp, E. J., No. 1 Dominion, Kern Co. | 27-26-28 | 1,434 | rig. to pump |
| Ring Oil Co., No. 1 Dominion, Kern Co. | 28-26-28 | 120 | sd. sh. drlg. |
| Vanguard Oil Co., No. 6 Mount Poso, Kern Co. | 33-27-28 | 1,451 | sd. sh. drlg. |
| Shell Oil Co., No. 18 Mount Poso Security, Kern Co. | 16-27-28 | 1,805 | rig. to pump |
| Shell Oil Co., No. 30 Mount Poso Vedder, Kern Co. | 9-27-28 | 757 | sd. sh. drlg. |
| Chevalier, J. J., No. 1 Mount Poso Vedder, Kern Co. | 3-27-28 | 1,455 | bailing |
| Lytle, R. S., No. 5 Mount Poso Dorsey, Kern Co. | 26-27-28 | 1,580 | sd. sh. drlg. |
| Cal-Coast-Apex Oil Co., No. 1 Mount Poso, Kern Co. | 36-26-27 | 2,131 | sd. sh. drlg. |
| Hall-Baker Co., No. 20-1 Jasmine, Kern Co. | 24-25-27 | 2,452 | sd. sh. drlg. |
| Doyle Pet. Co., No. 1 Jasmine, Kern Co. | 15-25-27 | 2,956 | rig. to pump |
| Elbee Oil Co., No. 1 Fruitvale, Kern Co. | 23-29-27 | 3,856 | will P.B. |
| Magnet Oil Co., No. 5 Fruitvale, Kern Co. | 21-29-27 | 4,155 | pump. 200 b.d. |
| Western Gulf Oil Co., No. 33 Fruitvale, Kern Co. | 21-29-27 | 3,990 | hd. sd. drlg. |
| Miami Oil Co., No. 1 Fruitvale, Kern Co. | 21-29-27 | 4,070 | P.B. 2,840 |
| Bilgrad Oil Co., No. 1 Fruitvale, Kern Co. | 21-29-27 | 3,670 | sd. sh. drlg. |
| Higgins, W. F., No. 1 Fruitvale, Kern Co. | 21-29-27 | 3,291 | sd. sh. drlg. |
| Oil Incorporated, No. 1 Fruitvale, Kern Co. | 26-29-27 | 3,390 | cleaning out |
| Dixie-Lee Oil Co., No. 5 Fruitvale, Kern Co. | 23-29-27 | 3,190 | cleaning out |
| Linderman Oil Corp., No. 1 Fruitvale, Kern Co. | 28-29-27 | 3,861 | sd. sh. drlg. |
| Whiston, H. L., No. 1 Fruitvale, Kern Co. | 23-29-27 | 3,152 | sd. sh. drlg. |
| Mosebach Oil Co., No. 1 Fruitvale, Kern Co. | 21-29-27 | 4,166 | cleaning out |
| Haar & White, No. 2 Fruitvale, Kern Co. | 26-29-27 | 2,972 | sd. sh. drlg. |
| Allied Pet. Co., No. 20 Mountain View, Kern Co. | 19-30-29 | 5,457 | P.B. 5,120 |
| Hogan Pet. Co., No. 18 Mountain View, Kern Co. | 32-30-29 | 5,758 | flow. 520 b.d. |
| Hogan Pet. Co., No. 19 Mountain View, Kern Co. | 5-31-29 | 5,610 | sd. sh. drlg. |
| Hogan Pet. Co., No. 20 Mountain View, Kern Co. | 4-31-29 | 3,951 | sd. sh. drlg. |
| Sheldon Oil Co., No. 2 Mountain View, Kern Co. | 19-30-29 | 5,685 | will cmt. |
| Standard Oil Co., No. 33 Mountain View, Kern Co. | 18-30-29 | 4,792 | sd. sh. drlg. |
| Hancock Oil Co., No. 10 Mountain View, Kern Co. | 14-30-28 | 2,162 | sd. sh. drlg. |
| Mohawk Pet. Co., No. 3 Mountain View, Kern Co. | 30-30-29 | 6,174 | fish. D.P. |
| Mohawk Pet. Co., No. 8 Mountain View, Kern Co. | 30-30-29 | 6,062 | sd. sh. drlg. |
| Mohawk Pet. Co., No. 2 Arvin, Kern Co. | 10-31-29 | 6,166 | will cmt. |
| General Pet. Corp., No. 1 Arvin, Kern Co. | 26-31-29 | 7,002 | sd. sh. drlg. |
| Associated Oil Co., No. 1 Arvin, Kern Co. | 3-31-29 | 5,425 | cmtd. 5,420 |
| Shell Oil Co., No. 1 Arvin, Kern Co. | 15-31-29 | 6,171 | Schist |
| Arkelo Oil Co., No. 1 Lerdo, Kern Co. | 23-28-26 | 4,764 | sd. sh. drlg. |
| Associated Oil Co., No. 1 Rio Bravo, Kern Co. | 30-29-25 | 7,573 | sd. sh. drlg. |
| Standard Oil Co., No. 11-1 Rio Bravo, Kern Co. | 19-29-26 | 6,994 | sd. sh. drlg. |
| Piute Holding Co., No. 1 Round Mountain, Kern Co. | 17-28-29 | 716 | sd. sh. drlg. |
| Shell Oil Co., No. 1-8 Gleese Round Mountain, Kern | 17-28-29 | 2,070 | P.B. 1,901 |
| Shell Oil Co., No. 11 Freeman Round Mountain, Kern | 20-28-29 | 1,720 | bailing |
| Texas Co., No. 1 San Emidio, Kern Co. | 11-11-22 | 9,983 | sd. sh. drlg. |
| Standard Oil Co., No. 9-1 Ten Section, Kern Co. | 34-30-26 | 7,270 | sd. sh. drlg. |
| Standard Oil Co., No. 10-1 Ten Section, Kern Co. | 20-30-26 | 8,196 | br. sh. drlg. |
| Shell Oil Co., No. 2 Ten Section, Kern Co. | 29-30-26 | 8,984 | P.B. 8,385 |
| Ohio Oil Co., No. 1-E Ten Section, Kern Co. | 19-30-26 | 8,093 | sd. sh. drlg. |
| Superior Oil Co., No. 8 Ten Section, Kern Co. | 11-30-26 | 4,281 | sd. sh. drlg. |
| Ohio Oil Co., No. 1-B Buena Vista Gas, Kern Co. | 4-32-26 | 4,920 | sd. sh. drlg. |
| C. C. M. Oil Co., No. 19-21 Midway-Sunset, Kern Co. | 21-32-23 | 2,362 | P.B. 1,680 |
| C. C. M. Oil Co., No. 20-21 Midway-Sunset, Kern Co. | 21-32-23 | 2,140 | bailing |
| C. C. M. Oil Co., No. 21-21 Midway-Sunset, Kern Co. | 21-32-23 | 1,874 | O.S. drlg. |
| Twentieth Century Oil Co., No. 1 Midway-Sunset, Kern | 1-11-24 | 1,630 | O.S. drlg. |
| Burkholder Oil Co., No. 1 Midway-Sunset, Kern Co. | 25-32-23 | 2,536 | will deepen |
| Alford Oil Co., No. 6 Midway-Sunset, Kern Co. | 25-12-24 | 2,712 | pump. 424 b.d. |
| Hallmark Oil Co., No. 5 Midway-Sunset, Kern Co. | 25-12-24 | 2,936 | recmtd. 2,710 |
| Quality Oil Co., No. 4 Midway-Sunset, Kern Co. | 22-32-23 | 1,590 | sd. sh. drlg. |
| Quality Oil Co., No. 5 Midway-Sunset, Kern Co. | 27-32-23 | 1,757 | sd. sh. drlg. |
| Associated Oil Co., No. 7 Midway-Sunset, Kern Co. | 35-31-22 | 1,510 | sd. sh. drlg. |
| Gibson Oil Co., No. 5 Midway-Sunset, Kern Co. | 6-11-23 | 3,075 | cmtd. 2,962 |
| Merritt-Annex Oil Co., No. 4 Midway-Sunset, Kern Co. | 25-12-24 | 2,950 | sd. sh. drlg. |
| Crawford Oil Co., No. 1 Midway-Sunset, Kern Co. | 15-31-22 | 1,141 | sd. sh. drlg. |
| Sheppard Oil Co., No. 1 Midway-Sunset, Kern Co. | 12-11-24 | 2,761 | sd. sh. drlg. |
| Standard Oil Co., No. 3-25-L Midway-Sunset, Kern Co. | 25-12-24 | 3,224 | will deepen |
| Standard Oil Co., No. 21-15-D Midway-Sunset, Kern Co. | 15-32-24 | 3,340 | will deepen |
| Standard Oil Co., No. 8-33-D Midway-Sunset, Kern Co. | 33-32-24 | 2,885 | rig. to deepen |
| Five Points Oil Co., No. 2 Midway-Sunset, Kern Co. | 18-11-23 | 1,186 | pump. water |
| Pomoc Oil Co., No. 8 Midway-Sunset, Kern Co. | 15-32-23 | 2,810 | cmtd. 2,456 |
| Union Oil Co., No. 1 Midway-Sunset, Kern Co. | 7-11-23 | 1,936 | cmtd. 1,595 |
| Union Oil Co., No. 3 Midway-Sunset, Kern Co. | 22-32-23 | 1,871 | sd. sh. drlg. |
| Birch-Ranch Oil Co., No. 1 Midway-Sunset, Kern Co. | 22-32-23 | 1,565 | rig. to pump |
| Jerman, R. W., No. 1 Midway-Sunset, Kern Co. | 17-31-23 | 4,858 | sd. sh. drlg. |
| Pan American, No. 66 Midway-Sunset, Kern Co. | 22-32-23 | 2,180 | wet; idle |
| Texas Co., No. 16 Midway-Sunset, Kern Co. | 32-32-24 | 3,037 | pump. 650 b.d. |
| South Cerritos Oil Co., No. 3 Midway-Sunset, Kern Co. | 22-32-23 | 1,817 | sd. sh. drlg. |
| Honolulu Oil Corp., No. 6 Midway-Sunset, Kern Co. | 14-32-24 | 3,120 | sd. sh. drlg. |
| Safeway Oil Co., No. 1 Midway-Sunset Diablo, Kern Co. | 26-32-23 | 3,660 | sd. sh. drlg. |
| St. Helens Pet. Co., No. 1 Midway-Sunset, Kern Co. | 22-32-24 | 3,425 | P.B. 3,282 |
| Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co. | 33-11-19 | 6,032 | fish. liner |
| Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co. | 33-11-19 | 4,518 | tested wet |
| Ohio Oil Co., No. 2 Tejon, Kern Co. | 21-11-19 | 4,200 | sd. sh. drlg. |
| Western Gulf, No. 3 Cantua, Fresno Co. | 3-17-15 | 8,527 | fish. tubing |
| Mohawk Pet. Co., No. 1 Cantua, Fresno Co. | 30-16-15 | 2,161 | sd. sh. drlg. |
| Etheridge Oil Co., No. 1 Iowa Kettleman North, Fresno | 27-21-17 | 688 | sd. sh. drlg. |
| K. N. D. A., No. 4-18-J Kettleman North, Fresno Co. | 18-21-17 | 9,060 | gr. sd. drlg. |
| K. N. D. A., No. 47-18-J Kettleman North, Fresno Co. | 18-21-17 | 8,931 | C.P. 8,717 |

### KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

| | | | | |
|---|---|---|---|---|
| K. N. D. A., No. 25-20-J Kettleman North, Fresno Co. | 20-21-17 | 3,692 | sd. sh. drlg. |
| K. N. D. A., No 21-30-J Kettleman North, Fresno Co. | 30-21-17 | 8,732 | gr. sd. drlg. |
| K. N. D. A., No. 52-30-J Kettleman North, Fresno Co. | 30-21-17 | 6,774 | br. sh. drlg. |
| K. N. D. A., No 52-28-J Kettleman North, Fresno Co. | 28-21-17 | 7,602 | hd. sd. drlg. |
| K. N. D. A., No. 63-28-J Kettleman North, Fresno Co. | 28-21-17 | 8,152 | gr. sd. drlg. |
| K. N. D. A., No. 33-24-H Kettleman North, Fresno Co. | 24-21-16 | 8,936 | P.B. 8,882 |
| K. N. D. A., No. 85-32-J Kettleman North, Fresno Co. | 32-21-17 | 6,070 | br. sh. drlg. |
| K. N. D. A., No. 52-34-J Kettleman North, Kings Co. | 34-21-17 | 6,575 | br. sh. drlg. |
| K. N. D. A., No. 72-34-J Kettleman North, Kings Co. | 34-21-17 | 7,675 | O.S. drlg. |
| K. N. D. A., No. 47-2-P Kettleman North, Kings Co. | 2-22-17 | 7,085 | fish. casing |
| Standard Oil Co., No. 32-19-J Kettleman North, Fresno | 19-21-17 | 8,781 | redrlg. 8,680 |
| Standard Oil Co., No. 72-19-J Kettleman North, Fresno | 19-21-17 | 8,770 | fish. D.P. |
| Standard Oil Co., No. 46-13-H Kettleman North, Fresno | 13-21-16 | 8,420 | hd. sd. drlg. |
| Standard Oil Co., No. 54-1-U Kettleman North, Kings | 1-23-18 | 8,189 | fish. D.P. |
| Standard Oil Co., No. 48-35-J Kettleman North, Kings | 35-21-17 | 7,671 | hd. sd. drlg. |
| Standard Oil Co., No. 46-19-V Kettleman Middle, Kings | 19-23-19 | 7,086 | br. sh. drlg. |
| Kettleman View Oil Co., Well No. 1, Kings Co. | 29-22-19 | 4,750 | gr. sd. drlg. |
| Associated Oil Co., No. 1 Avenal, Kings Co. | 33-23-17 | 9,110 | P.B. 2,890 |
| McBurney Oil Co., No. 1 Carriso, San Luis Obispo Co. | 23-32-22 | 1,087 | sd. sh. drlg. |
| Foster, R. A., No. 1 Carriso, San Luis Obispo Co. | 2-32-22 | 5,000 | fish. baller |
| United Oil Co., No. 2 Panorama, San Luis Obispo Co. | 2-32-21 | 2,043 | sd. sh. drlg. |
| Union Oil Co., No. 1 Huasna, San Luis Obispo Co. | 22-32-15 | 2,430 | br. sh. drlg. |
| Lewis, A. O., No. 1 Pecho, San Luis Obispo Co. | 34-30-10 | 2,310 | will deepen |
| Martin, J. D., No. 4 Pismo, San Luis Obispo Co. | 5-32-13 | 3,080 | sd. sh. drlg. |
| Martin, J. D., No. 5 Pismo, San Luis Obispo Co. | 5-32-13 | 3,121 | sd. sh. drlg. |
| Cholame Synd., No. 1 Cholame, San Luis Obispo Co. | 10-25-15 | 3,687 | cleaning out |
| Shell Oil Co., No. 1 Pleyto, Monterey Co. | 34-24-16 | 8,994 | P.B. 8,750 |
| Shell Oil Co., No. 2 Pleyto, Monterey Co. | 34-24-16 | 3,998 | sd. sh. drlg. |
| Texas Co., No. 2 Eureka, Humboldt Co. | 22- 3-1 | 5,273 | sd. sh. drlg. |
| Standard Oil Co., No. 2 Rio Vista, Solano Co. | 27- 4-2 | 4,768 | dry; abd. |
| Alford, J. W., No. 1 Sumner, Tulare Co. | 28-16-23 | 260 | idle |
| Trico Oil & Gas Co., No. 1 Angiola, Tulare Co. | 7-23-23 | 3,187 | P.B. 1,800 |
| Trico Oil & Gas Co., No. 2 Angiola, Tulare Co. | 27-21-25 | 3,250 | gr. sd. drlg. |
| Associated Oil Co., No. 1 Sargent, San Benito Co. | 5-12-4 | 4,533 | form. test |
| Seaboard Oil Co., No. 1 Alameda, Alameda Co. | 13- 3-3 | 4,915 | hd. sh. drlg. |

### IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

| Company, well and location: | S.T.R. | Depth | Status |
|---|---|---|---|
| Standard Oil Co., No. 1 Alondra, Los Angeles Co. | 22- 3-14 | 4,603 | sd. sh. drlg. |
| Richfield Oil Co., No. 1 El Segundo, Los Angeles Co. | 18- 3-14 | 6,171 | sd. sh. drlg. |
| Signal Finance, No. 1 Hawthorne, Los Angeles Co. | 10- 3-14 | 9,395 | reaming |
| Listle, J. I., No. 1 Moneta, Los Angeles Co. | 33- 3-14 | 7,352 | P.B. 4,100 |
| C. C. M. Oil Co., No. 2 Torrance, Los Angeles Co. | 31- 3-14 | 4,150 | hd. sd. drlg. |
| C. C. M. Oil Co., No. 8 Torrance, Los Angeles Co. | 9- 4-14 | 3,966 | P.B. 3,834 |
| Southwest Pet. Co., No. 1 Torrance, Los Angeles Co. | 6- 4-14 | 2,540 | sd. sh. drlg. |
| Pongratz, Gus, No. 2 Torrance, Los Angeles Co. | 8- 4-14 | 3,359 | cleaning out |
| Clark, T. R., No. 1 Torrance, Los Angeles Co. | 31- 3-14 | 4,354 | sd. sh. drlg. |
| Collier, P. V., No. 1 Torrance, Los Angeles Co. | 16- 4-14 | 3,794 | redrlg. 3,465 |
| Associated Oil Co., No. 51 Inglewood, Los Angeles Co. | 8- 2-14 | 1,976 | sd. sh. drlg. |
| Standard Oil Co., No. 80 Inglewood, Los Angeles Co. | 8- 2-14 | 4,090 | flow. 2,045 b.d. |
| Shell Oil Co., No. 1 Flood Control, Los Angeles Co. | 11- 4-13 | 2,978 | sd. sh. drlg. |
| West American, No. 1 Gardena, Los Angeles Co. | 5- 4-13 | 6,596 | cleaning out |
| Shell Oil Co., No. 84 Dominguez Reyes, Los Angeles | 33- 3-13 | 7,642 | fish. D.P. |
| Shell Oil Co., No. 87 Dominguez Reyes, Los Angeles | 33- 3-13 | 4,075 | sd. sh. drlg. |
| Union Oil, No. 42 Dominguez Callender, Los Angeles | 33- 3-13 | 6,654 | cleaning out |
| Union Oil, No. 47 Dominguez Callender, Los Angeles | 33- 3-13 | 8,711 | sd. sh. drlg. |
| Union Oil, No. 50 Dominguez Callender, Los Angeles | 33- 3-13 | 6,494 | sd. sh. drlg. |
| Union Oil, No. 42 Dominguez Hellman, Los Angeles | 33- 3-13 | 6,735 | cleaning out |
| Union Oil, No. 44 Dominguez Hellman, Los Angeles | 33- 3-13 | 3,954 | cmtd. 3,871 |
| Santa Rita Oil Co., No. 1 Rosecrans, Los Angeles Co. | 20- 3-13 | 3,540 | sd. sh. drlg. |
| Continental Oil Co., No. 39 Seal Beach, Los Angeles Co. | 11- 5-12 | 6,060 | cleaning out |
| Eastern Oil Co., No. 1 Playa Del Rey, Los Angeles Co. | 22- 2-15 | 7,562 | will P.B. |
| Sharby Oil Co., No. 1 Playa Del Rey, Los Angeles Co. | 22- 2-15 | 5,895 | sd. sh. drlg. |
| Union Oil Co., No. 17 Vidor Playa Del Rey, Los Angeles | 27- 2-15 | 5,885 | sd. sh. drlg. |
| Superior Oil Co., No. 1 Del Rey, Los Angeles Co. | 25- 2-15 | 7,025 | fishing |
| Yant Pet. Corp., No. 1 Newhall, Los Angeles Co. | 1- 3-16 | 2,816 | P.B. 1,500 |
| Holbrook Pet. Co., No. 1 Newhall, Los Angeles Co. | 28- 4-16 | 3,419 | recmtd. 2,612 |
| Barnsdall Oil Co., No. 1 Newhall, Los Angeles Co. | 26- 4-17 | 4,254 | sd. sh. drlg. |
| General Pet. Corp., No. 1 Wilmington, Los Angeles Co. | 4- 5-13 | 6,814 | P.B. 5,510 |
| Gauthier Oil Co., No. 1 Wilmington, Los Angeles Co. | 27- 4-13 | 3,241 | sd. sh. drlg. |
| Woodward, J. A., No. 1 Montebello, Los Angeles Co. | 4- 2-11 | 3,197 | pump. water |
| Standard Oil Co., No. 89 Montebello, Los Angeles Co. | 1- 2-12 | 2,910 | pump. 110 b.d. |
| Standard Oil Co., No. 90 Montebello, Los Angeles Co. | 1- 2-12 | 1,851 | sd. sh. drlg. |
| Universal Consd., No. 8 Montebello, Los Angeles Co. | 5- 2-11 | 7,471 | P.B. 5,696 |
| Universal-Richfield, No. 1-J Montebello, Los Angeles | 6- 2-11 | 5,676 | O.S. drlg. |
| Richfield Oil Co., No. 3 Montebello, Los Angeles Co. | 5- 2-11 | 1,940 | sd. sh. drlg. |
| St. Helens Pet. Co., No. 22 Montebello, Los Angeles Co. | 2- 2-11 | 1,261 | sd. sh. drlg. |
| St. Helens Pet. Co., No. 23 Montebello, Los Angeles Co. | 2- 2-12 | 1,153 | sd. sh. drlg. |
| Texas Co., No. 15 Montebello, Los Angeles Co. | 6- 2-11 | 5,831 | O.S. drlg. |
| Hathaway, No. 3 Fulton, Santa Fe Springs, Los Angeles | 6- 3-11 | 4,462 | rig. to pump |
| General Pet., No. 137-F Santa Fe Springs, Los Angeles | 6- 3-11 | 5,465 | sd. sh. drlg. |
| Ring Oil Co., No. 4 Santa Fe Springs, Los Angeles Co. | 5- 3-11 | 4,666 | bailing |
| Union Oil Co., No. 34 Santa Fe Springs, Los Angeles | 6- 3-11 | 4,490 | pump. water |
| Union Oil Co., No. 35 Santa Fe Springs, Los Angeles | 6- 3-11 | 4,450 | sd. sh. drlg. |
| Union Oil Co., No. 36 Santa Fe Springs, Los Angeles | 6- 3-11 | 4,060 | sd. sh. drlg. |
| Union Oil Co., No. 98 Santa Fe Springs, Los Angeles | 6- 3-11 | 4,095 | cleaning out |
| Union Oil Co., No. 100 Santa Fe Springs, Los Angeles | 6- 3-11 | 5,487 | sd. sh. drlg. |
| Union Oil Co., No. 101 Santa Fe Springs, Los Angeles | 6- 3-11 | 5,415 | cmtd. 5,409 |
| Union Oil Co., No. 102 Santa Fe Springs, Los Angeles | 6- 3-11 | 4,536 | pump. 130 b.d. |
| Vanda Petroleum, No. 1 Santa Fe Springs, Los Angeles | 6- 3-11 | 8,060 | dry; abd. |
| Sibert Oil Co., No. 1 Santa Fe Springs, Los Angeles Co. | 31- 2-4 | 4,802 | redrlg. 2,750 |
| Charter Oak Oil Co., No. 1 Covina, Los Angeles Co. | 7- 1-9 | 1,012 | sd. sh. drlg. |
| Shell Oil Co., No. 43 Alamitos Long Beach, Los Angeles | 29- 4-12 | 3,930 | cmtd. 3,915 |
| Great Coastal Oil Co., No. 1 Elsinore, Riverside Co. | 36- 5-5 | 3,000 | fishing |
| Associated Oil Co., No. 4 Huntington, Orange Co. | 34- 5-11 | 4,050 | redrlg. 3,465 |
| Associated Oil Co., No. 8 Huntington, Orange Co. | 34- 5-11 | 4,158 | bailing |
| Westport Oil Co., No. 1 Huntington, Orange Co. | 34- 5-11 | 3,979 | cmtd. 3,790 |
| Vicaroo Oil Co., No. 1-A Huntington, Orange Co. | 12- 6-11 | 2,996 | sd. sh. drlg. |
| Pac-American Pet. Co., No. 3 Huntington, Orange Co. | 34- 5-11 | 3,899 | bailing |
| Elliott Oil Co., No. 1 Huntington, Orange Co. | 34- 5-11 | 2,571 | sd. sh. drlg. |
| Lucky Strike Oil Co., No. 7 Huntington, Orange Co. | 2- 6-11 | 3,352 | hd. sd. drlg. |
| Richfield Oil Co., No. 3 Huntington, Orange Co. | 34- 5-11 | 3,200 | will deepen |
| Union Oil Co., No. 9 Huntington, Orange Co. | 34- 5-11 | 3,298 | sd. sh. drlg. |
| Ajax Petroleum Co., No. 1 Newport, Orange Co. | 21- 6-10 | 7,262 | resume work |
| Shell Oil Co., No. 19 Brea, Orange Co. | 2- 3-10 | 5,097 | water witch |
| Standard Oil Co., No. 2-5 Coyote, Orange Co. | 22- 3-10 | 3,790 | P.B. 573 |
| Bar Oil Co., No. 1 East Coyote, Orange Co. | 21- 3-9 | 2,476 | sd. sh. drlg. |
| Holly Oil Co., No. 1 East Coyote, Orange Co. | 20- 3-9 | 4,512 | cleaning out |
| Oil Conservation Co., No. 1 East Coyote, Orange Co. | 20- 3-10 | 1,791 | sd. sh. drlg. |
| Continental Oil Co., No. 1 East Coyote, Orange Co. | 20- 3-9 | 2,725 | pump. 50 b.d. |
| Hancock Oil Co., No. 1 East Coyote, Orange Co. | 17- 3-9 | 2,883 | pump. 145 b.d. |
| West Coast Ref. Co., No. 1 Santa Ana, Orange Co. | 25- 3-9 | 1,854 | hd. sd. drlg. |
| Union Oil Co., No. 29 Chapman Richfield, Orange Co. | 30- 3-9 | 8,010 | sd. sh. drlg. |
| Union Oil Co., No. 36 Chapman Richfield, Orange Co. | 29- 3-9 | 3,167 | sd. sh. drlg. |
| Union Oil Co., No. 37 Chapman Richfield, Orange Co. | 29- 3-9 | 2,473 | sd. sh. drlg. |
| Calif. Eastern Oil Co., No. 1 Placentia, Orange Co. | 31- 3-9 | 4,786 | redrlg. 4,176 |
| Melbourne Pet. Co., Well No. 1 San Bernardino Co. | 12- 3-8 | 2,233 | pump. 60 b.d. |
| Equitable Pet. Co., No. 1 Wildcat, San Bernardino Co. | 11-10-5 | 2,812 | hd. sd. drlg. |

# KANSAS

Week Ending October 31 (Descriptions are East unless marked otherwise)

### Barber County

**Sinclair Prairie Oil Co. No. 1 Gentry, NE** cor. sec. 1-33-15w. Miss. 4,807 ft. (cor.); Viola 5,105 ft.; based Miss. 5,065 ft.; drlg. 5,175 ft., no shows.

### Barton County

**F. E. Bailey et al No. 1 Hammeke, NE NE SW sec. 12-18-12w.** Set 20-in. pipe 40 ft.; S.D. 315 ft.

**Freeborn et al No. 1 Sooy, NW NW NE sec. 27-18-12w.** Cellar.

Minnehoma Oil & Gas Co. No. 1 Smith, NW NW NE sec. 20-18-13w. M.I.M.

**S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. R.U.S.T.**

**C. L. Price No. 1 Deutsch, NW NW NE** sec. 16-16-13w. Topeka 2,820 ft.; drlg. 3,125 ft.

**Yarnell & Carlson No. 1 Roth, NE cor. sec.** 35-18-12w. K.C. 3,120 ft.; Sil. 3,454 ft.; H.F.W. 3,475-89 ft.; D.&A.

### Butler County

**Hutchinson Oil & Gas Co. et al No. 1-A Westfall, SE SW SE sec. 13-27-3.** Drlg. 2,030 ft.

**Simpson Oil Co. No. 1 Deblem, SW cor.** sec. 11-26-6. Sand 2,710 ft.; H.F.W. 2,725-35 ft.; fsg. 2,783 ft.

**Ed Solomon No. 1 Church, SW NE SE** sec. 8-28-5. S.D. 200 ft.

### Chase County

**Propp et al No. 1 Fromm, SE cor. sec. 29-18-9e.** S.D. 2,035 ft.

### Clark County

**Olson & Watchorn No. 1 Morrison, C SE** SW sec. 17-32-21w. Viola 6,456 ft.; S.O. 6,477-78 ft.; cd. 6,478-81 ft.; 33 B.O.&1⅝ B.W. in 30 mins. on Halliburton test; R.U.S.T.

### Cowley County

**Craft et al No. 1 Whitson, NE cor. sec. 20-33-4e.** R.U.

**C. H. Cross No. 1 Cook, SW cor. sec. 6-32-6.** R.U. mch.

**Home Natural Co. & McNish No. 2 Werner, SE SE SW sec. 31-32-6.** Stalnaker sand 1,868-70 ft.; 4,159,000 ft. gas; 555 lbs. R.P.

**Wakefield et al No. 1 Beekman, NW NW SE sec. 26-32-3.** Drlg. 525 ft.

### Decatur County

**Winkler & Koch No. 1 Vessey, C NW SE sec. 26-3-26w.** Fsg. 2,135 ft.

### Edwards County

**Stanolind O. & G. Co. et al No 1 Donovan, C SE SE sec. 14-26-18w.** Whipstock 4,332 ft.; W.O.C.

### Ellis County

**Bridgeport Mch. Co. and Hall No. 1 Madden Est., NE NW NW sec. 26-15-18w.** O.W.D.D.; Sil. 3,589 ft.; T.D. 3,597 ft.; 5-in. 3,584 ft.; swabbed 7½ B.O.P.H. for 12 hrs.

**Bridgeport Mch. Co. No. 1 Ubert, NE NE NW sec. 12-13-18w. Sil. 3,598 ft. Pay 3,630-37 ft.; T.D. 3,707 ft.; acd.; no result; swbd. 155 bbls. oil and 21 bbls.** wtr. in 14 hrs.; P.B. 3,638 ft.; drlg. cement.

**Jas. Brouk et al No. 1 Jacobs, NW NW SE sec. 31-15-16w.** S.G. 2,600 ft.; fsg. 2,635 ft.

**Champlin Refining Co. No. 1 Hadley, SE SW NE sec. 30-11-17w. Siliceous 3,613** ft.; S.D. 3,792 ft.

**Glick & Morrow No. 1 Staah, SW SW SE sec. 6-13-17w. 7-in. csg. 3,367 ft.; R.U. S.T. 3,369 ft.; T.D.**

**H. Jones Bros. et al No. 1 Phillips, SE SE NW sec. 9-15-17w.** R.U.

**Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w.** Drlg. 2,700 ft.

**Lario O. & G. Co. No. 1 Marshall, NW SE NE sec. 36-11-18w.** Anhy. 1,347 ft.; Oswald 3,356 ft.; S.O. &G., 3,384-90 ft.

**Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w.** S.D. 600 ft.

**Taylor et al No. 1 Emery, NE NE NE sec. 23-14-18w.** Anhy. 1,162 ft.; drlg. 2,060 ft.

**Winkler & Koch No. 1 Jensen, SW SW NE sec. 3-13-18w.** Rig.

**Ralph Wixson et al No. 1 Gorham Estate, NW NW SW sec. 35-15-16w. Topeka 2,-850 ft.;** Oswald 3,135 ft.; 8-in. 3,255 ft.; 1 B.O.P.H. 3,275-80 ft.; U.R. 3,300 ft.

**Wolf Creek Oil Co. et al No. 1 Polifka, SW SW NE sec. 24-13-18w. Oswald 3,-480 ft.;** Cong. 3,737 ft.; Sil. 3,845-85 ft. H.F.W. 3,985-90 ft.; D.&A.

### Graham County

**Sam Murphy and J. S. Alcorn No. 1 Wamhoff, C NW sec. 27-10-22w.** Oswald 3,599 ft.; Cong. 3,905 ft.; Sil. 3,990 ft.; drlg. 4,070 ft.

**Noah & Young No. 1 Hills, NW SE SE** sec. 19-10-21w. Set 7-in. 3,508 ft.; drlg. 3,528 ft.

### Grant County

**Columbian Fuel Co. No. 1 Gray, C SE sec. 3-29-35w. Set 8-in. csg. 2,500 ft.; 3,000.-000 ft. gas, 2,808 ft.; T.D.; milling.**

### Greenwood County

**Dunn & Lewis No. 2 Dawson, C NE NE** sec. 27-26-13e. 8-in. 810 ft.; C.O. 825 ft.

**Guy Scott et al No. 1 Pedroja, SE NE SE sec. 6-26-10. Peru sd. 1,675-1,720 ft.;** S.O.; fsg. 2,130 ft.

**Hale & Reese No. 1 Needles, NE SW NW** sec. 12-25-10. Drlg. 1,350 ft.

### Harvey County

**Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Set 6⅝-in. csg. 3,118** ft.; S.D. 3,265 ft.

**Inca Prod. Co. No. 1 Moore, C NE NE** sec. 26-24-3w. Set 10-in. csg. at 545 ft.; W.O.C. 579 ft.

**Saco et al No. 1 Guthrie, NE NE NW** sec. 8-22-2e. R.U.

### Haskell County

**Helmerich & Payne et al No. 1 Larson, C SE sec. 28-28-33w. T.D. 2,978 ft.; P.B. 2,771 ft.;** shot.

**Helmerich & Payne No. 1 Meredith, C SW** sec. 10-30-33w. R.U.R.

### Kearney County

**J. L. Murphy No. 1 Campbell, NW NW** SW sec. 32-25-35w. Anhydrite 1,900 ft.; drlg. 2,020 ft.

### Lincoln County

**Graham et al No. 1 Smiley, NE NW NW** sec. 26-10-9w. Set 10-in. csg. 300 ft.; S.D.

### Logan County

**Rose Spring Drlg. Co. et al No. 1 Wright, C SE SE sec. 12-15-35w.** R.U.R.

### Marion County

**Harwood Oil Co. et al No. 1 W. H. Mott,** NE cor. sec. 2-17-4e. Drlg. 1,405 ft.

**Western Kansas Oil & Refining Co. et al No. 1 Hauser, SW cor. sec. 19-19-4.** R.U.

### Meade County

**Pacific Midwest Co. No. 1 Rexford, NE** SE SW sec. 8-30-29w. R.U.

### Ness County

**Newton Dev. Co. No. 1 Tenny, NW NW** SE sec. 19-18-25w; 10-in. 1,942 ft.; drlg. 2,245 ft.

**Sayre Oil Co. et al No. 1 Ryersee, C NE** SE sec. 34-18-21w. 5-in. liner 4,264 ft.; S.D. 4,270 ft.

### Pawnee County

**Kessler & Thier et al No. 1 Shea, NE NE** NE sec. 22-21-17w. 15-in. 94 ft., W.O.C.

### Pratt County

**H. V. Elwell et al No. 1 Fay, NW NW SE sec. 15-27-14w. C.O. 4,355 ft.; T.D.**

**Indian Territory Illum. Oil Co. and Olson Drlg. Co. No. 1 Bolt, C NW NE sec.** 5-29-11w. Chat 4,176 ft.; Viola 4,383 ft.; Simpson 4,474 ft.; Wilcox 4,484-86 ft.; C.O. 4,486 ft.

### Reno County

**Carlock et al No. 1 Brown Realty Co., NW NW NE sec. 32-22-10w.** Rig.

**Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. Set 5-in. lnr. 3,385 ft.;** Chat 3,424 ft. (cor.); 6-in. 3,475 ft.; C.O. 3,503 ft.

**Miller et al No. 1 Detter, NE SE SW sec.** 28-22-7w. H.F.W. 3,105-25 ft.; drlg. 3,125 ft.

**Pryor & Lockhart et al No. 1 Kerr, C NW** sec. 23-23-8w. Chat. 3,685 ft.; S.O. 3,720 ft.; H.F.W. 3,750-55 ft.; drlg. 3,893 ft.

**Clyde Pulse No. 1 Payne, SW NW NE sec.** 4-22-7w. Set 12-in. at 133 ft.; drlg. 1,175 ft.

**Torry & Feaster No. 1 Schroeder, SE cor. sec. 1-23-7w.** B.R.

**Westgate-Greenland Oil Co. No. 1 Fossey, SW SW SE sec. 12-22-8w.** R.U.R.

### Rice County

**Allison & Fitzwilliam et al No. 1 Feby** NW SW NW sec. 17-19-7w. 8-in. 3,052 ft.; S.O. 3,222-26 ft.; Cong. 3,225 ft.; S.D. 3,516 ft.

**Beardmore et al No. 1 M. A. Johnson, NW** NW NE sec. 17-21-7w. Rig.

**Buckley No. 1 Bailey, SW SW NW sec 19-20-6w. Rig.**

**Carlock et al No. 1 Deweese, SW NW NW** sec. 32-20-7w. Drlg. 2,535 ft.

**Charles Petroleum Corp. No. 1 Speck, NW NW SE sec. 29-20-8w. Fsg. 2,795 ft.**

**Hanna et al No. 1 Brothers, SE SE NW sec. 25-20-8w. Loc.**

**Sage et al No. 1 Patton, SW cor. sec 5-21-7. Cong. 3,329-37 ft.; T.D. 3,342 ft.;** 6-in. liner at 3,337 ft.; swabbed 35 bbls. oil per hr.

**Shell Pet. Corp. No. 1 Maughlin, NE NW SE sec. 11-20-8w. Siliceous 3,235-38 ft.;** 36,500,000 ft. of gas at 3,260 ft.; acidized; no gas; T.D. 3,294 ft.; S.I.

**Shell Petroleum Corp. et al No. 1 Soeken "A." C NW sec. 10-19-9w. 12-in. 172 ft.,** W.O.C. 185 ft.

**W. E. Witt et al No. 1 Wright, NW NW SE sec. 26-19-9w. R.U.**

### Rooks County

**Buckner & Schoff No. 1 McConnel, NE** cor. sec. 34-6s-18w. Drlg. 590 ft.

**Empire Oil & Ref. Co. No. 1 Ham, SW** NW NW sec. 24-8-19w. Anhydrite, 1,278 ft.; U.R. 1,280 ft.

**Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. Rig.**

**Jarvis & Strickland No. 1 Hamel, SE SE** SW sec. 7-8-20w. M.I.M.

**L. C. D. Drlg. Co. et al No. 1 Westhusin, C NE SE sec. 11-9-17w. Topeka 2,894 ft.;** set 6-in. csg. 3,146 ft.; 1,800 ft. fluid in hole; T.D. 3,192 ft.

**J. H. Lester No. 1 Methene, SE SE NE** sec. 29-10-20w. S.D. 3,422 ft.

**J. A. Shoemake No. 1 Stebbins, NE NE SW** sec. 26-7-17w. T.D. 3,591 ft.; P.B. to 2,976 ft.; 2,500 ft. fluid in hole; P.B.

### Rush County

**Schoenfeld & Kitch No. 1 Winget, SE cor.** sec. 15-16-16w. R.U.

**C. L. Sheedy No. 1 Bison, SW cor. sec.** 35-16-17w. S.D. 3,035-40 ft.; K.C. 3,323 ft.; drlg. 3,358 ft.

### Russell County

**Joe Aylward et al No. 1 McAllister, NE NE** SE sec. 9-12-13w. H.F.W. 3,410-15 ft.; U.R. at 3,425 ft.

**El Dorado Ref. Co. No. 1 Scott, NW NW NE sec. 17-13-13w. S.D. 835 ft.**

**Equity Gas Co. No. 1 Harbaugh, NW NE** SW sec. 19-13-12w. R.U.M.

### Saline County

**Brouk et al No. 1 Othelander, NE NW** SE sec. 10-16-3w. 8-in. 2,310 ft.; drlg. 2,385 ft.

### Sedgwick County

**Cameron et al No. 1 Smith, SW SE SE** sec. 13-27-2e. M.I.M.

**D. R. Lauck No. 1 McLean, SW SW SE sec. 1-27-1w. Siliceous 3,613 ft.; wtr.**

3,755-68 ft.; T.D. 4,122 ft. (cor.); lost bit; S.D.

**R. J. Wallace et al No. 1 Scheer,** SW cor. sec. 22-27-3w. S.O. 3,145 ft.; base K.C. L. 3,265 ft.; chat, 3,690 ft.; drlg. 3,743 ft.

### Scott County

C. R. Blackman et al No. 1 Nolan, NW NW NE sec. 13-19-33w. Loc.

### Sheridan County

O. A. Roberts et al No. 1 Corrick, C NW sec. 34-9-26w. R.U.R.

### Smith County

**Helmerich & Payne, No. 1 Meyer,** C NE SW sec. 10-5-11w. Drlg. 1,195 ft.

### Stafford County

Empire Ref. Co. et al No. 1 Jordon, SW SW NW sec. 15-25-14w. 15-in. 294 ft.; W.O.C.

**Indian Terr. Illum. Oil Co. and Empire O. & R. Co. No. 1 Mellies,** C N½ N½ NE sec. 6-22-11w. Cong. 3,395 ft.; Viola, 3,468 ft.; Simpson, 3,480 ft.; Sil. 3,522 ft.; H.F.W. 3,534-36 ft.; D.&A.

**Skelly Oil Co. et al No. 1 Kipp,** SE SE NE sec. 27-25-14w. Gas 3,707 ft.; inc. to 800,000 ft. at 3,725-27 ft.; sat. at 3,847-62 ft.; S.G. 3,895-3,900 ft.; set 6-in. 3,975 ft.

**C. E. Skiles No. 1 Leidigh,** NW NW SW sec. 21-22-11w. 8-in. csg. 2,205 ft.; drlg. 2,550 ft.

### Sumner County

W. C. McBride, Inc. & Olson Drilling Co. No. 1 Kinlund, NE NW NE sec. 24-34-1e. Layton, 2,892 ft.; S.O. 2,892-92½ ft.; S.W. 2,892-95 ft.; drlg. 3,335 ft.

**Empire O. & R. Co. No. 1 Hoffman,** NW NW SW sec. 27-34-1e. Fsg. 345 ft.

**Graham et al No. 1 Dawson,** NW NW NW sec. 4-33-2w. Rig.

**Hapenny & Green et al No. 1 Evers,** SE SE NE sec. 27-31-2. S.D. 519 ft.

**Rose Spring Drlg. Co. et al No. 1-A Rutter,** C NW NW sec. 21-33-2e. R.U.R.

**Texas Co. No. 1 Reed,** NE SE SE sec. 11-31-1w. Drlg. 4,027 ft.

### Trego County

**J. J. Hall et al No. 1 Deines,** SE SE SE sec. 12-13-24w. Set 6-in. csg. 4,528 ft.; S.D. 4,740 ft.

**R. B. McNeely et al No. 1 Lemke,** NW NW SW sec. 7-11-22w. Cong. 3,869 ft.; Sil. 3,900 ft.; T.D. 4,040 ft.

**G. M. Piggott, Inc. et al No. 1 Burkett** C SW sec. 15-11-22w. Cong. 3,760 ft.; B.P. 3,805 ft.; 100 ft. O.I.H. at 3,820-27 ft.; run 5-in. liner.

**York State Oil Corp. No. 1 Gugler** SW cor. sec. 36-12-21w. Set 6-in. 3,492 ft.; U.R. at 3,715 ft.

### Woodson County

Dwyer et al No. 1 Wolf, NE NE SW sec. 9-24-14. R.U.M.

C. L. Sheedy et al No. 1 Fagan, NE NE SE sec. 11-26-14. 8-in. 1,077 ft.; S.D. 1,100 ft.

# OKLAHOMA

Week Ending October 31

## NORTHERN OKLAHOMA

### Beckham County

**Mid-American Oil Co. No. 1 Biscoe,** SW SW SW sec. 28-8-22w. S.D. 950 ft.

### Caddo County

**Wasteka Oil Co. No. 1 Griffin,** SW SE NE sec. 27-6-10w. T.D. 6,579 ft.; P.B. to 5,400 ft.; cmtd. drlg. pipe at 5,055 ft.; set whipstock at 2,000 ft.; tried to drill by; S.D.O.

### Cleveland County

**Helmerich & Payne, Inc., No. 1 Glenn,** C NW NE sec. 6-8-1w. Rig corners.

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. Rig.

### Coal County

**Carter Oil Co. et al No. 1 Warne,** NE NE NW sec. 31-3-9. Cg. 3,854-68 ft.; rec. sdy. L. and sd.; salty.

**Continental Oil Co. No. 1 Breedlove,** NW SW SW sec. 24-1-8. Drlg. 3,510 ft.

Continental Oil Co. No. 1 Daniels, SW NE SW sec. 27-1-9. Drlg. 2,405 ft.

**Continental Oil Co. No. 1 King,** NE SW NE sec. 26-1-8. Hunton 4,354 ft.; S.O. 4,358 ft.; T.D. 4,745 ft.; set 9-in. csg.; W.O.C.

**Continental Oil Co. No. 1 W. Kirby,** SW 1,788 ft.; set 9-in. csg. 1,783 ft.; T.D. 1,925 ft.; S.D.O.

**Sinclair Prairie Oil Co. No. 1 Culver,** NE NE SW sec. 16-1-8. T.D. 5,610 ft.; packer 5,515 ft.; no shutoff; to retest.

### Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. Drlg. 1,365 ft.

### Garfield County

Ohio Oil Co. No. 1 McFarland, SE SE SE sec. 25-24-3w. Rig.

Ohio Oil Co. No. 1 Smythe, NE NE SW sec. 23-22-4w (Wilcox sd. test) Viola 4,879 ft.; Simpson 4,910 ft.; first Wilcox 4,968-5,020 ft.; second Wilcox 5,070 ft.; cg. 5,166-71½ ft.; recovered 5½ ft. sand, slightly stained.

### Garvin County

**Ellison & Hammond No. 1 Selby,** C SE NW sec. 24-2n-3w. T.D. 166 ft.; S.D. for water.

**C. A. Luttrell et al No. 1 Howell,** NW SE NW sec. 34-1-1. T.D. 160 ft.; S.D.

**Pure Oil Co. No. 1 Baker,** NE cor. sec. 7-2-1e. Cd. 3,690-3,700 ft.; rec. 9 ft. 10-in gray sh.; to drill ahead.

### Greer County

Neff-Godfrey-Andrea No. 1 Melton, SE NW SE sec. 16-3n-22w. Loc.

### Hughes County

R. K. Ellison No. 1 Peters, SE NW SE sec. 8-6-10. Drlg. 267 ft.

**McAdams & Barnes No. 1 Koch,** SW NE NE sec. 1-9-10. T.D 3,835 ft.; P.B to 2,600 ft.; whipstocking 2,900 ft.; P.B. with 200 sacks; setting whipstock at 2,985 ft.

**McAdams & Barnes No. 1 Long,** SE NE NW sec. 29-9-9. Drlg. 3,130 ft.

Mid-West Oil Co. No. 1 Turner-Lucas, C SE NW sec. 13-9-9. Drlg. 485 ft.

**Sivalls et al No. 1 Montgomery,** NW SW NW sec. 7-9-9. Crom. 3,472-94 ft.; T.D. 3,540 ft.; 5-in. csg. run to 3,472 ft.; not cmtd.; will S.D.

**Southern Oil Co. No. 1 Buck,** C NW SW SW sec. 21-8-10. R.U.S.T.

### Kay County

**Max Kelley No. 1 Johns,** NW NW NW sec. 35-27-4. Sand 1,280-1,306 ft.; H.F.W.; sand, 1,335-55 ft.; H.F.W.; drlg. 1,820 ft.

### Kiowa County

**Argus Pet. Co. No. 1 Osbourne,** NW cor. NE sec. 9-7-16w. T.D. 1,015 ft.; C.O. Burns & Moore No. 1 Block, NW NE SW sec. 31-6-16w. S.D. 50 ft.

**Lykins et al No. 1-A Aetna Life,** SE cor. sec. 8-5-16w. T.D. 750 ft.; S.D.

**Travis & Scott No. 1 Dovie,** NE SE SW sec. 21-5-17w. T.D. 939 ft.; machine moved out.

J. M. Young No. 1 Cooke, NE NE NW sec. 33-2-16w. H.F.W. 513-34 ft.; drlg. 560 ft., shale.

### Latimer County

Cheyenne Oil Co. No. 1 Wilson, C SE SE sec. 15-5-18. Rig and M.I.M.

### Le Flore County

**McCraw et al No. 1 Tidwell,** C NW SE sec. 17-3-22. Set 10-in. csg. 1,876 ft.; drlg. 1,993 ft.

### Lincoln County

Fleetborn Oil Corp. No. 1 Turner, NW NW SE sec. 28-17-5. Drlg. 720 ft.

**Skelly Oil Co. No. 1 Sporn,** NW NE SW sec. 21-17-3. T.D. 4,651 ft. in sd.; drill stem test failed; packer stuck.

### Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. C.O. at 4,955 ft.

**Helmerich & Payne et al No. 1 Hasp,** NW NW SE sec. 14-16-4w. Drlg. 4,210 ft.

### McIntosh County

**Stanolind Oil & Gas Co. et al No. 1 Tiger** NW NW SW sec. 13-9-15. Drlg. 3,798 ft.

### Murray County

**Power Oil Co. No. 1 Lancaster Trust Co., C SW NE sec. 10-1s-2e. Top of Springer** 1,860 ft.; S.O. at 1,851-56 ft.; Woodford 2,630 ft.; Hunton, 2,951 ft.; dense lime showing oil 2,951-3,002 ft.; T.D. and S.D. for 7-in. csg.

### Muskogee County

A. D. Spears et al No. 1 Robbins, NW cor. sec. 20-15-20. Turkey Mt. sd. 1,677-84 ft. T.D. small show gas through 100 ft. salt water; bailing.

### Noble County

Shell Pet. Corp. No. 1 Moelling, C SW NW sec. 31-21-2w. Drlg. 543 ft.

### Osage County

**Chavalier & Simon No. 1 Osage,** SE cor. sec. 24-23-9. Drlg. 1,030 ft.

### Pittsburg County

**Okla. Dist. Oil Co. No. 1 Beeler,** NE NE SW sec. 7-7-14. Sand, 3,398 ft.; drlg. 3,436 ft.

### Pontotoc County

**Caloma Oil Corp. No. 1 Brentz,** SE NE SW sec. 4-1-6. S.D. 503 ft.

**H. H. Diamond No. 1 fee,** SE cor. sec. 30-5-8. Drlg. 475 ft.

### Seminole County

**Amerada Pet. Co. No. 1 Yarhola,** NE NW NW sec. 36-10-7. Cd. 3,630-38 ft.; T.D. rec. sand with odor of oil; Hal. test; packer at 3,620 ft.; open 2 hrs., 5,000,000 ft. gas.; S.I.

**H. E. Kennedy No. 1 Bowlegs,** NW NW SE sec. 3-8-7 Loc

**Riverland O. & G. Co. No. 1-A Goebelt,** NW SE SE sec. 12-6-6. Loc.

A. I. Spears No. 1 Keaton, NW cor. sec. 6-5-8. Rig.

### Texas County

**Allison & Barnhill No. 1 Bingley,** SE SE NE sec. 30-2n-18. (Cimmaron Meridian) S.D. 1,300 ft.

## SOUTHERN OKLAHOMA

### Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. T.D. 890 ft.; rep. motor.

**Shell Pet. Corp. No. 4 Hill-A,** NW sec. 30-3-10. Cd. 4,113-59 ft.; rec. sand, slightly stained.

### Carter County

**Head & Straus No. 1 Simpson & Fell,** NW NW SE sec. 5-1s-3w. R.U.

### Comanche County

Frank Scott No. 1-A Kuntz, SE NE SE sec. 21-4-11w. Drlg. 337 ft.

**L. D. Wise No. 1 Cones,** SE SE SW sec. 11-1n-10w. T.D. 1,908 ft.; S.D.

### Cotton County

**Phillips Pet. Co. No. 1 Warren,** C NE NE SE sec. 1-5s-13w. T.D. 2,158 ft.; crooked hole; P.B. to 1,933 ft.; lime, 2,240 ft. Drlg. 2,285 ft.

### Harmon County

**Lionlko Trust, Ltd., No. 1 Crosnoe,** SE SE SW sec. 14-3n-25w. T.D. 2,980 ft.; S.D.O.

### Jefferson County

**A. T. Campbell No. 1 Trout,** SE NE NE sec. 6-8s-7w. Moving in machine; T.D 2,212 ft.; drlg. cmt. at 2,160 ft.

**Massad & Swansberger No. 1 Barrett,** NE cor. SE SE sec. 14-6s-6w. Spudded 12 ft.

**Mid-Continental Oil Co. No. 1 Reid,** C SW NW sec. 32-6s-4w. Set 10-in. csg. 40 ft.

**Pearson et al No. 1 Douthitt,** NE cor. sec. 24-6s-9w. Drlg. 4,180 ft.

**Twin State Oil Co. No. 1 Brown & Majors,** SW SE NW sec. 21-5s-6w. Loc.

### Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. Drlg. 295 ft.

### Love County

**Amerada Pet. Corp. No. 1-A Westheimer & Daube,** SW SE SW sec. 27-6s-2e. T.D. 7,363 ft.; P.B. 2,970 ft.; perforated csg. at 1,539-99 ft. and 2,095-2,115 ft.; cmtd. perf.; flwd. 22 bbls. in 24 hrs. and "went dead"; S.D.O. Aug. 4.

**W. H. Riddle et al No. 1 Johnson,** C SW SE cor. sec. 20-8s-2w. T.D. 4,009 ft.; waiting for tools; will deepen.

**Sinclair Prairie Oil Co. No. 1 Stockton** SE SE SW sec. 26-6s-2w. T.D. 5,583 ft.; cut 5-in. csg. at 7,109 ft.; P.B. to 6,927 ft.; bailed out; 1,800 ft. oil in hole; rigging standard tools.

### Marshall County

**Magnolia Pet. Co. No. 1 Gardner,** NE NE NW sec. 34-6s-6e. Drlg. 620 ft.

### Stephens County

Jack Cohen No. 1 Pierce, NE NE NW sec. 24-2s-6w. Drk.

**Coline Oil Co. No. 1 Johnson,** SW SE NE sec. 1-2n-8w. Drlg. 2,506 ft., shale.

H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. Spudded and R.U.R.

T. H. McCasland No. 1 Hilderbrand, NW NW NE sec. 1-3s-7w. Drlg. 1,550 ft.

**Ed Parson No. 1 Olson,** C SW SW sec. 31-2-8w. Cd. 4,716-33; recovered 10 ins. sandy shale odor of gas; drlg. 5,025 ft., shale.

### Tillman County

**Beal & Toler No. 1 Magill,** SE SE SE sec. 18-1n-16w. T.D. 595 ft.; machine moved out.

Indian Terr. Ill. Oil Co. No. 1 Hatler, C SW NE sec. 32-2s-17w. R.U.R.

**Lynn Oliver No. 1 Rilling,** SE SE NW sec. 22-1s-15w. Drlg. 1,249 ft. in granite wash.

**D. S. Smith No. 1-A Hammill,** NE NE NW NW sec. 6-5s-15w. T.D. 2,425 ft.; S.D.

# ARKANSAS

### Bradley County

**Joe Modisette No. 1 Bird,** N half NW NE sec. 28-16-12. Drlg. 3,470 ft.

### Clark County

**John G. Wooten No. 1 Z. T. Sparkman,** sec. 1-11-20. S.D. 300 ft.

### Cleveland County

J. R. Lockhart No. 1 Ida Robertson, SE cor. sec. 36-10-11w. Drlg. 860 ft.

### Columbia County

**Buford & Co. No. 1 Kendrick,** 330 ft. S and E. NW cor. SE¼ sec. 7-19-18. Drlg. 4,975 ft.

**King Oil Co. No. 1 Kitchen et al,** NE SE NW sec. 13-17-22. Drlg. 1,500 ft.

### Dallas County

**Walter Lown No. 1 G. Atkinson,** NE NW SE sec. 7-10-13. 12-in. cmt. 76 ft.; W. O.C.S.

### Hempstead County

**Easton et al No. 2 Conway-Tiller,** 330 ft. N and E, SW cor. SW sec. 34-12-27. S.D. 3,001 ft., high water.

**Imperial Oil & Gas Prod. Co. No. 1 Foster Est.,** sec. 35-12-26. Cg. S.W. sd. 3,325 ft.

**Lewis Hays No. 2 State of Ark. (Red River bed),** SE cor. sec. 18-14-25. S.D. hd. sd. 3,150 ft.

**Stewart Oil Co. No. 1 fee,** sec. 31-12-23. Drlg. 2,910 ft.

### Little River County

**Joe Strahan No. 1 Dierks,** SW SE sec. 21-12-28. S.D. 60 ft.

### Lonoke County

Frank F. Silver No. 1 Joe Chambers, NE NW sec. 17-2n-7w. T.D. 1,980 ft.; hd. rk; D.&A.

### Miller County

**Erwin & Leach No. 1 Red River Farms,** sec. 2-17-26. Drlg. 4,200 ft.

**C. V. Lenz No. 7 Dale,** O.W.D.D., sec. 24-15-26. Drlg. 4,190 ft.

**Odell Hinson No. 1 Montana Realty Co.,** 330 ft. S and W NE NW NW sec. 3-17-28. T.D. 5,468 ft.; fsg. for D.P.

### Nevada County

**Benedum & Trees No. 1 Groves,** C N half SE NW sec. 10-14-20. 8-in. set 2,170 ft.; bailing and tstg.; T.D. 2,190 ft.

**L. M. Glasco No. 1 Ritchie Est.,** NW NW SE sec. 10-14-20. Drk.

**Steel & Warmack No. 1 Wm. Haynil,** SE SE NW sec. 6-14-21. S.D. 200 ft.

### Ouachita County

J. D. Reynolds No. 2 M. V. Lenehon, NW SE SW sec. 36-15-16. Drlg. 60 ft.

### Pope County

Arkansas-La. No. 1 Smith, sec. 10-8n-21w. Drlg. 2,050 ft.

### Pulaski County

G. L. Kilselman No. 1 fee, SE SE SW sec. 2-1s-13w. S.D. 490 ft.; hd. rk.

### Union County

**Penn-Ark. Corp. No. 1 W. N. Raulston,** 330 ft. S and E. NW NW SE sec. 12-17-14. T.D. 2,100 ft.; S.D.; repairs.

**S.H.A. Oil Corp. No. 2 E. F. Gregory,** SW NE SW sec. 10-17-14. O.W.D.D.; S.D.; S.W. sd.; T.D. 3,413 ft.; rig rep.

# LOUISIANA

## NORTH LOUISIANA PROVEN

### Caddo-Rodessa

**Ark.-La. Gas Co. No. 2 Teamer,** NW SE SW sec. 13-23-16. Fsg. for 3,400 ft. of D.S.

**Blackwell O. & G. Co. No. 2 Wynn,** sec. 8-23-15. Drk.

**J. G. Collins No. 2 Caddo School Bd.,** sec. 8-23-15. R.U. and S.D.

**W. C. Feazel and Kauns No. 1 Wynn,** SE SW NE sec. 8-23-15. Drlg. 5,245 ft.

**W. C. Feazel and Kauns No. 2 Wynn,** SE SW NE sec. 8-23-15. 7-in. cmt. 5,942 ft.; T.D. 5,955 ft.; W.O.C.S.

**David L. Harlin No. 1 W. D. Norton,** NW cor. sec. 22-23-15. Loc.

**Idessa Oil Co. No. 1 D. K. Sumner,** NW SW SE sec. 10-23-15. Hole clean; drlg. 5,820 ft.

**J. Edward Jones No. 1 M. Z. Sharp,** 1,227 ft. N. 330 ft E. SW cor. SE¼ sec. 4-23-16. Drlg. 3,632 ft.

**La. Oil Rft. Co. No. 4 Ratcliff,** NW cor. sec. 16-23-16. Drlg. 5,910 ft.

**Lion Oil Ref. Co. No. 3 Wynn,** SW cor. sec. 9-23-15. Comp.; flw. 40 B.P.H.; ¾-in. tbg. ck.; T.D. 6,060 ft.

**Lion Oil Ref. Co. No. 4 Wynn,** 330 ft. N. 990 ft. E. SW cor. sec. 9-23-15. 7-in. cmt. 6,072 ft.; T.D. 6,085 ft.; W.O.C.S.

**Lion Oil Co. No. 5 Wynn,** 330 ft. N, 2,310 ft E, SW cor. sec. 9-23-15. Drlg. 2,200 ft.

**McAlester Fuel Co. No. 2 N. S. Tyson,** C sec. 22-23-16. Acidized 2,000 gals.; est. 15,000,000 ft. gas; P.B. 5,990 ft. and perf.; tstg.; old T.D. 6,016 ft.

**Magnolia No. 9-A Caddo Levee Bd.,** SW SE NW sec. 21-23-16. 7-in. cmt. 5,968 ft.; T.D. 5,980 ft.; W.O.C.S.

R. W. Norton No. 1 Starke, SE SW sec. 16-23-16. Drlg. 3,340 ft.

**R. W. Norton No. 1 Payne,** C SE SE sec. 27-23-16. Drlg. 3,800 ft.

**Phillips Pet. Co. No. 2 Interstate,** 330 ft. S and W, NE NW sec. 16-23-15. Loc.

**Phillips Pet. Co. No. 7 Norton,** NE SE NW sec. 17-23-15. T.D. 6,048 ft.; tstg.

**Phillips Pet. Co. No. 2 Rose McDonald,** NW SE¼ NE sec. 17-23-15. Drlg. 5,098 ft.

**Phillips No. 1 Wilbanks,** NE SW SW sec. 8-23-15. T.D. 6,077 ft.; no shows; W.O.

**Phillips Pet. Co. No. 4 Cora Woods,** SE NW NE sec. 17-23-15. T.D. 6,095 ft.; 7-in. cmt. 6,080 ft.; W.O.C.S.

**Snowden & Anding No. 3 Taylor,** C W½, Lot 9, Blk. 46, sec. 23-23-16. T.D. 2,065 ft.

**Standard Oil of La. No. 1 Farmer,** SW NW SW sec. 7-23-15. 13-in. cmt. 260 ft.; W.O.C.S.

**Tide Water No. 13 Sexton,** SE SE SE sec. 14-23-16. O.W.D.D.; T.D. 6,066 ft.; tstg.

**United Gas No. 4 fee,** NW NW SE sec. 16-23-16. Loc.

**United Gas No. 5 Brewer Unit,** SE SW NW sec. 21-23-16. Drlg. 3,887 ft.

**United Gas No. 8 Brewer Unit,** 33 ft. N, 588 ft. W. C sec. 22-23-16. 7-in. cmt. 5,980 ft.; T.D. 6,012 ft.; W.O.C.S.

United Gas No. 3 Gibson Unit, 656 ft. N and E, SW SW NW sec. 15-23-16. Loc.
United Gas No. 2 McCoy, 656 ft. N and W, SE SE NE sec. 16-23-16. Loc.
United Gas No. 4 fee 574, NW NW SE sec. 15-23-16. 13-in. cmt. 252 ft.; W.O.C.S.
United Gas No. 24 Rodessa Oil & Ld. Co., SE NW SE sec. 17-23-16. 7-in. cmt. 5,-965 ft.; T.D. 5,983 ft.; W.O.C.S.
United Gas No. 25 Rodessa Oil & Ld. Co., NE NW NE sec. 22-23-16. Drlg. 5,539 ft.
United Gas No. 26 Rodessa O. & Ld. Co., NW SW NE sec. 15-23-16. 9-in. cmt. 2,-207 ft.; W.O.C.S.
United Gas No. 5 W. B. Spearman, NW SW sec. 16-23-16. 9-in. cmt. 2,177 ft.; W. O.C.S.
United Gas No. 7 N. S. Spearman, SW cor. sec. 7-23-15. Comp.; flw. 30 B.P.H.; ½-in. tbg. ck.; T.D. 6,075 ft.

## N. LOUISIANA WILDCATS

### Bienville Parish

**DeSoto O. & G. Co. No. 1 Dunn and Olson, C N½ NW¼ sec. 15-16-10. Drlg. 3,707 ft.**
**J. W. Leonard No. 1 Courtney, 330 ft N and W, SE cor. sec. 5-17-5w. T.D. 7,-324 ft.; D.&A.**

### Bossier Parish

**Ark-La Gas Co. No. 1 J. G. McDade, NW cor. sec. 8-17-11. Drlg. 3,542 ft.**
**Geo. H. Bringhurst et al No. 2 Buckley, 1,000 ft. N, 330 ft. W, SE cor. sec. 35-21-13. Drlg. 2,926 ft.**
**Premier Inv. Co. No. 35, NW NE NW sec. 14-19-11. T.D. 412 ft.; comp.; pmp. 30 B.P.D.**
**United Gas No. 1-G H. L. Skannal, NE SE NE sec. 22-17-12. Drlg. 315 ft.**
**United Gas No. 1 Roos, NW cor. sec. 23-17-12. Drlg. 4,900 ft.**
**United Gas No. 1-F H. L. Skannal, 660 ft. S. 2,640 ft. W, NE cor. sec. 26-17-12. Comp.; flw. 175 B.P.D.; ¼-in. tbg. ck.; T.D. 5,201 ft.**
**Premier Inv. Co. No. 6 Weaver, NW SE NW sec. 14-19-11. T.D. 425 ft.; top sd. 270 ft.; pmpd. 35 B.P.D.; comp.**

### Caddo Parish

**C. C. Crews No. 2 Pender NW SW sec. 11-20-15. T.D. 1,500 ft.; S.D. rig. rep.**
**W. D. Chew No. 1-D Levee Bd., NW SE NE sec. 34-21-16. 6-in. cmt. 920 ft.; W. O.C.S.**
**W. D. Chew No. 2 Levee Bd., NE cor. sec. 5-20-16. R.U.**
**Gulf Ref. Co. No. 1 E. P. Hatcher, 660 ft. N and E, SW cor. SE¼ sec. 11-17-15. Drlg. 6,847 ft.**
**Producers O. & G. Co. No. 2 Currie, NE SE sec. 32-19-16. Drlg. 800 ft.**
**J. B. Hutchinson No. 2 Storey-Phillips, SW cor. NE NW sec. 28-16-13. S.D. 2,-700 ft.**
**Morefield & Prine No. 3 Stokeley, sec. 5-20-16. R.U.**
**Prairie River Synd. No. 1 Hutchinson, 330 ft. N and E, SW NW sec. 15-15-12. Drlg. 7,312 ft.**
**Simplex No. 5 Natalie, SE W½ SE sec. 10-20-15. S.W. 2,197 ft.; P.B. 2,177 ft. and W.O.**
**Stanolind O. & G. Co. No. 111, NE cor. sec. 14-21-15. Comp.; pmp. 55 B.P.D.; acid; T.D. 1,684 ft.**
**Stanolind O. & G. Co. No. 112 Dillon hrs., 872 ft. S, 1,400 ft. E, NW SE sec. 14-21-15. Loc.**
**Stanolind O. & G. Co. No. 113 Dillon hrs., 655 ft. S, 744 ft. E, NW SE sec. 14-21-15. Loc.**
**Stanolind O. & G. Co. No. 114 Dillon hrs., 65 ft. N, 816 ft. E, SW SE NE sec. 14-21-15. Loc.**
**F. L. Luckett No. 1 Connell, NE sec. 10-20-15. S.D. 908 ft.**
**Stewart-Williams No. 3 Iron, SW NE 16-20-15. Tstg. S.W. and show oil; T.D. 2,197 ft.; W.O.**

### Caldwell Parish

**Crickett & Woods No. 1 fee, NW SE NE sec. 18-11-3. T.D. 1,735 ft.; D.&A.**

### Catahoula Parish

**J. Ray McDermott No. 1 La. Cen. Lbr. Co., NW cor. sec. 15-10-5e. T.D. 2,799 ft.; D.&A.**

### Claiborne Parish

**E. T. Oakes No. 1 H. W. Patton, NE cor. sec. 1-20-5. 6-in. cmt. 5,077 ft.; T.D. 6,-076 ft.; W.O.C.S.**
**United Gas Public Service Co. No. 2 Durfett, 660 ft. N and 1,980 ft. E, SW cor sec. 31-20-5. T.D. 5,616 ft., fshg. for D.P.**
**United Gas No. 1 A. P. Taylor, SE cor. sec. 5-19-5. Drlg. 5,045 ft.**

### De Soto Parish

**Jal Drlg. Co. No. 1 Jenkins, SE SW SE sec. 35-13-12. 7-in. cmt. 2,397 ft.; W.O. C.S.**
**R. C. Payne No. 1 Harris, sec 11-13-14. S.D. 2,798 ft.; hd. L.**
**T. W. Simmons No. 1 Johns, 330 ft. N 990 ft. W, C sec. 20-14-16. T.D. 2,800 ft.; D.&A.**

### Grant Parish

**Arcadia Oil Co. No. 4-B Swope, 330 ft. N of No. 2-B, sec. 17-9-1e. R.U.**
**Cane River Prod. Co. No. 1 Swope, SW NW sec. 17-9-1e. Drlg. 50 ft.**
**Grant Oil Co. No. 1 Swope, SW N½ NE SW sec. 17-9-1e. T.D. 1,609 ft.; comp.; pmp. 15 B.P.D.**
**Grant Oil Co. No. 2 Swope, SE NE SW sec. 17-9-1e. Drlg.**
**Pet. Prod. Co. No. 1 Buffington, SE NE sec. 18-9-1. T.D. 1,608 ft.; tstg.**
**Perry et al No. 1 Barrett, 150 ft. N and W, SE NE SE sec. 17-9-1e. 6-in. cmt. 1,583 ft.; W.O.C.S.**
**Rogers Oil No. 2 Swope, SW NW SW sec. 17-9-1e. T.D. 1,604 ft.; comp.; pmp. 75 B.P.D.**

### LaSalle Parish

**H. L. Hunt No. 8 Urania, NE SW NW sec. 25-10-1. Comp.; T.D. 1,542 ft.; pmp. 15 B.P.D.**
**Urania Oil & Gas No. 1 Urania, NW cor. sec. 7-10-2. S.D. 300 ft.**
**Waller et al No. 1 Pendarnis, NE SW SE sec. 26-10-1e. Drlg. 450 ft.**

### Morehouse Parish

**So. Carbon Co. No. 17 Tensas, NE cor. sec. 4-20-4. Drk.**
**United Carbon Co. No. 7 Stovall, NW cor. sec. 27-21-4. R.U.**

### Natchitoches Parish

**Ivan A. Allen No. 1 Simpson, sec. 12-7n-7w. Drlg. 295 ft.**
**J. F. Lent No. 1 Locke, NE SE SW sec. 26-9-9. R.U.**
**C. D. Morrison No. 1 Moffitt, 250 ft. N 250 ft. W, SE cor. sec. 19-10-10. 10-in set 110 ft.; W.O.C.S.**
**Union Pet. Co. No. 2 DeBlieux, 2,395 ft. E. 150 ft. S of W cor. sec. 33-10-7w. Cg. 3,770 ft.**

### Red River Parish

**Byrd Exp. Co. No. 1 Edge, SW NE sec. 29-13-11. Hole clean; T.D. 2,499 ft.; W. O.S.R.**
**W. J. Hunter No. 1 Long Bell Lbr. Co., sec. 19-13-9. T.D. 3,734 ft.; tstg. S.W.; W.O.**
**Perla Oil Co. No. 1 DeLong, 330 ft. S and E, C sec. 33-12-10. Drlg. 482 ft.**

### Richland Parish

**Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. Drlg. 7,777 ft.**

### Sabine Parish

**Blue Lake Oil Co. No. 1 Delaney & Wheless, NW SW sec. 31-9-13. Drlg. 150 ft.**
**M. C. Forsman No. 1 Patrick, NE SW sec. 21-9-13. W.O.S.R.**
**F. G. Cox No. 1 Whitney Corp., C NW NE sec. 8-9-13. Cmt. 7-in. 2,985 ft.; drlg. out plug; T.D. 5,503 ft.**
**Ellis Prod. Co. No. 1 Small, SE NW SE sec. 24-7-11. T.D. 2,875 ft.; tstg.; dry and S.D.**
**J. R. Keen No. 1 Long Bell, 276 ft. N and 288 ft. W, SE cor. NE SW sec. 5-18-13. Acidized; W.O.S.R.**
**Posey Sisters Oil Co. No. 3 Burkett, NE cor. sec. 10-9-13. Drlg. 3,174 ft.**
**A. H. Tarver No. 2 Baker, NW cor. NE sec. 36-8-12. T.D. 6,200 ft.; S.W.; W.O.**

### Union Parish

**So. Carbon Co. No. 12 Grayling, NE cor. sec. 29-21-4e. Comp.; 19,000,000 ft. gas; T.D. 2,126 ft.**
**So. Carbon Co. No. 13 Grayling, SE cor. sec. 5-21-4e. 12-in. cmt. 163 ft.; W.O.C.S.**
**So. Carbon Co. No. 14 Grayling, SE cor. sec. 5-21-4e. Loc.**
**So. Carbon Co. No. 15 Grayling, SW cor. sec. 4-21-4e. Cmt. 6-in. 2,150 ft.; W.O. C.S.**

### Webster Parish

**Magnolia Pet. Co. No. 5 J. Cox, SW SE sec. 23-21-10. T.D. 5,530 ft.; tstg.; shows oil and gas.**
**R. W. Norton No. 2 Josey & Masey, C W½ NE NW sec. 27-21-10. Clearing loc.**
**Red Hawk Oil Co. No. 1 Mayfield, sec. 9-23-9. 10-in. set 90 ft.; W.O.C.S.**
**Ohio Oil Co. No. 1 R. M. Coyle, NE SE sec. 22-21-10. 9-in. cmt. 5,585 ft.; T.D. 5,623 ft.; W.O.C.S.**
**Ohio Oil Co. No. 1 Bodcaw Lbr. Co., C NE SE sec. 28-21-10. Drlg. 5,850 ft.**
**Seaboard Oil Corp. No. 1 Cotton Valley Ld. & Lbr. Co., NW SW sec. 35-22-10. Drlg. 200 ft.**
**United Gas No. 2 Davis, 660 ft. S and E, NW cor. sec. 23-21-10. Drlg. 5,670 ft.; tstg.; dry.**
**United Gas No. 1 Mixon, SE SW sec. 22-21-10. Drlg. 6,215 ft.; D.S.T. 1,000,000 ft. gas.**
**Woodley Pet. Co. No. 2-A L. C. Cox, SW NE sec. 22-21-10. Drlg. 4,816 ft.**
**Woodley Pet. Co. No. 2-B L. C. Cox, cen SW SW sec. 23-21-10. R.U.**

## SOUTH LOUISIANA FIELDS

### Black Bayou—Cameron Parish

**Shell Pet. Corp. No. 35 Watkins, sec. 8-12s-12w. T.D. 4,994 ft.; making D.S.T.**

### Caillou Island—Terrebonne Parish

**Texas Co. No. 42 State, sec. 20-23s-20e. Drlg. sdy. sh. 778 ft.**
**Texas Co. No. 39 State, sec. 17-23s-20e. T.D. 4,145 ft.; P.B. 3,100 ft.; sdtkd.; abd. 4,432 ft.**
**Texas Co. No. 45 State, sec. 20-23s-20e. T.D. 3,879 ft.; 7⅝-in. csg. 3,833 ft.**

### Charenton—St. Mary Parish

**Mike Hogg et al No. 1 Laws Realty Co., sec. 30-13s-10e. R.U.**
**Mike Hogg No. 1 State, sec. 5-13s-9e. Drlg. sdy. sh. 7,610 ft.**

### Choctaw—Iberville Parish

**Standard Oil Co. No. 1 Wilbert, sec. 53-9s-11e. T.D. 2,705 ft.; 5-in. csg. 2,691 ft.; drlg. plug.**

### Dog Lake—Terrebonne Parish

**Texas Co. No. 19 State, sec. 5-22s-16e. T.D. 7,097 ft.; 7-in. csg. 7,068 ft.; I.P. 942 B.P.D. through ⅝-in. ck.**

### Cameron Meadows—Cameron Parish

**Burton Sutton Oil Co. No. 15 Sch. Ld., sec. 16-14s-13w. Drlg. sd. and gravel 846 ft.**
**Magnolia-Humble No. 18 Cameron Meadows, sec. 21-14s-13w. T.D. 3,437 ft.; 9⅝-in. csg. 3,421 ft.; W.O.C.**

### Darrow—Ascension Parish

**Humble O. & R. Co. No. 4 Community, sec. 33-10s-2e. Drk.**
**Humble O. & R. Co. No. 13 Humble Community, sec. 33-10s-2e. T.D. 4,423 ft.; P.B. and sdtrkg.; top salt 5,178 ft.; T.D. 5,254 ft.; P.B. 2,114 ft.; drlg. sd. 5,568 ft.**

### Fausse Point—Iberia Parish

**Texas Co. No. 2 State, sec. 35-11s-8e. Drlg sh. 6,341 ft.**

### Gillis—Calcasieu Parish

**Fohs Oil Co. No. 14 Castle sec. 13-9s-8w. Drlg. sd. 5,847 ft.**
**Fohs Oil Co. No. 15 Castle, sec. 13-9s-8w. T.D. 7,042 ft.; oil sd.**
**Union Sulphur Co. No. 10 Barbe, sec. 1-9s-8w. Drlg sh. and L. 3,337 ft.**
**Union Sulphur Co. No. 11 Barbe, sec. 1-9s-8w. Loc.**
**Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. Loc.**
**Union Sulphur Co. No. 2 Bel, sec. 12-9s-8w. T.D. 6,788 ft.; P.B. 5,600 ft.; drlg. sd. and sh. 5,758 ft.**
**Union Sulphur Co. No. 3 Kaufman, sec. 13-9s-8w. Drlg. sh. 7,004 ft.**
**Union Sulphur Co. No. 10 Powell, sec. 2-9s-2w. T.D. 6,768 ft.; 5-in. csg. 6,754 ft.**
**Union Sulphur Co. No. 11 Powell, sec. 12-9s-8w. Loc.**
**Union Sulphur Co. No. 13 State, sec. 13-9s-8w. Drk.**
**Union Sulphur Co. No. 15 State, sec. 12-9s-8w. Drk.**

### Hackberry—Cameron Parish

**Gulf Oil Corp. No. 22 Erwin, sec. 12-12s-10w. Drk.**
**Harrison and Abercrombie No. 1 Verdine, sec. 36-12s-10w. 16-in. csg. 62 ft.**
**Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. Drlg. sh. 680 ft.**
**Stanolind O. & G. Co. No. 5 Carter-Severing, sec. 22-12s-10w. T.D. 3,703 ft.; waiting on csg.**
**Stanolind O. & G. Co. No. 3 Duhon, sec. 22-12s-10w. Drk.**
**Stanolind O. & G. Co. No. 24-B Gulf Ld sec. 14-13s-10w. T.D. 6,157 ft.; P.B. 3,817 ft.; W.O.C.**
**Stanolind O. & G. Co. No. 7-A School Ld., sec. 16-12s-10w. 10¾-in. csg. 1,969 ft.; drlg. sd. 5,716 ft.**
**Superior Oil Prod. Co. No. 1 Hebert, sec. 33-12s-10w. Drlg. sh. 1,200 ft.**
**Texas Co. No. 21 State, sec. 12-12s-10w. Drk**
**Texas Co. No. 19-B State, sec. 13-12s-9w. Drlg. sd. and sh. 6,227 ft.**

### Iowa—Cameron Parish

**Shell Pet. Corp. No. 21 Heyd, sec. 13-9s-7w. T.D. 1,316 ft.; W.O.C.**

### Jeanerette—St. Mary Parish

**Herton Oil Co. No. 1 Barrileau, sec. 59-13s-8e. P.B. T.D. 6,700 ft.; perfd. csg. 6,680-88 ft.; P.B. and sdtrkd. at 5,500 ft.; drlg. sh. 5,548 ft.**
**Herton Oil Co. No. 2 Carter, sec. 38-13s-9e. Drlg. sh. and shells 7,546 ft.**

### Jennings—Acadia Parish

**Cosmo Pet. Co. No. 3 Clement, sec. 46-9s-2w. T.D. 2,145 ft.; 6⅝-in. csg. 2,145 ft.**
**Ray Croft No. 2 Houssiere-Latrille, sec. 47-9s-2w. T.D. 1,725 ft.; swbg.**
**Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. R.U.**
**Stanolind O & G. Co. No. 17 Houssiere-Latrille, sec. 47-9s-2w. T.D. 7,515 ft.; 7-in. csg. 7,509 ft.; P.B. 7,211 ft.; perfd. csg. 6,220-48 ft.; I.P. 64 B.P.D. through ¼-in. ck.**
**Superior Oil Prod. Co. No. 1 Crawley, sec. 42-9s-2w. Drlg. sd. 4,533 ft.**
**Superior Oil Prod. Co. No. 1 Jennings-Heywood, sec. 41-9s-2w. Drlg. sd. 4,439 ft.**

### Lafitte—Jefferson Parish

**Texas Co. No. 5 Rigolettes, sec. 29-17s-24e. T.D. 10,942 ft.; stuck pipe while rmg. at 10,932 ft.; shot at 7,000 ft.**
**Texas Co. No. 6 Lafitte, sec. 20-17s-24e. Dig canal.**
**Texas Co. No. 1 R. C. Milling, sec. 20-17s-24e. Drlg. sdy. L. 5,930 ft.**
**Texas Co. No. 6 Rigolettes, sec. 39-17s-24e. Dig canal.**

### Lake Barre—Terrebonne Parish

**Texas Co. No. 37 Lake Barre State. T.D. 7,048 ft.; fsg.**
**Texas Co. No. 38 State, sec. 38-21s-19e T.D. 3,769 ft.; I.P. 1447 B.P.D. through ¼-in. ck.**

### Lake Hermitage—Plaquemines Parish

**Gulf Oil Corp. No. 6, LaFourche, sec. 11-8s-25e. Drlg. sd. and sh. 1,949 ft.**

### Lake Pelto—Terrebonne Parish

**Texas Co. No. 15 State, sec. 17-23s-18e. Drlg. sh. 5,350 ft.**

### Leesville—LaFourche Parish

**Carter-Michael No. 1 E. S. Bernard, sec. 26-21s-22e. Drk.**
**Gulf Oil Corp. No. 4 City of New Orleans, sec. 26-21s-22e. Drlg. sd. and sh. 1,640 ft.**
**Gulf Oil Corp. No. 57 Leesville, sec. 27-21s-22e. Abd. 4,767 ft.**
**Texas Co. No. 50 Leesville, sec. 34-21s-22e. Drlg. sh. 3,007 ft.**
**Texas Co. No. 51 Leesville, sec. 34-21s-22e. R.U.**
**Texas Co. No. 52 Leesville, sec. 34-21s-22e. T.D. 4,466 ft.; rng. csg.**

### New Iberia—Iberia Parish

**Crysanthon et al No. 1 Gulf fee, sec. 71-12s-7e. T.D 6,720 ft.; rng. screen.**
**H. Fostiades No. 2 Gulf Ld., sec. 25-12s-7e. R.U.**
**H. Fostiades No. 3 Schwing, sec. 25-12s-7e. T.D. 6,400 ft.; P.B. and sdtrkg. 5,-004 ft.**
**Wm. Hellis No. 3 Bullick, sec. 52-12s-7e. Loc.**
**Wm. Hollis No. 4 Bolivar, sec. 56-12s-7e. T.D. 3,966 ft.; tstg.**
**Kitos et al No. 3 Sealy, sec. 36-12s-7e. 9⅝-in. csg. 874 ft.; W.O.C.**
**Texas Co. No. 1 Clementine, sec. 25-12s-1e. Drlg. sdy. sh. 6,694 ft.**
**Texas Co. No. 1 Gragleano, sec. 25-12s-7e. 10⅝-in. csg. 62 ft.; T.D. 4,435 ft.; oil sd.**
**Texas Co. No. 3-B Hanzen, sec. 54-12s-7e. T.D. 4,320 ft.; oil sd.**

### Roanoke—Jefferson Davis Parish

**Humble O. & R. Co. No. 5-B Devilbiss, sec. 11-9s-4w. Drlg. sh. and shells 5,-263 ft.**
**Shell Pet. Corp. No. 6 Kratzer, sec. 12-9s-4w. 10¾-in. csg. 2,454 ft.**

### Port Barre—St. Landry Parish

**Pan American Prod. Co. No. 2 Garland, sec. 4-6s-5e. Drlg. sh. 2,625 ft.**

### Sorrento—Ascension Parish

**Pan American Prod. Co. No. 6 United Ld. Co., sec. 15-10s-4e. Drlg. 1,230 ft.**

### St. Martinsville—St. Martin Parish

**Continental Oil Co. No. 1 fee, sec. 57-11s-6e. 13⅜-in. csg. 1,387 ft.; drld. plug to 6,727 ft.; P.B. to 6,560 ft.; W.O.C.**

### Starks—Calcasieu Parish

**J. R. Turnbull No. 1 Lutcher-Moore, sec. 19-9s-12w. Drlg. sd. and L. 2,181 ft.**

### Sulphur—Calcasieu Parish

**Union Sulphur Co. No. 834 fee, sec. 20-9s-10w. T.D. 4,469 ft.; P.B. 2,325 ft.; W.O.C.**
**Union Sulphur Co. No. 835 fee, sec. 20-9s-10w. T.D. 4,341 ft.; 7-in. csg. 4,316 ft. I.P. 500 B.P.D. through ¼-in. ck.**
**Union Sulphur Co. No. 836 fee, sec. 20-9s-10w. Drlg. sh. 2,709 ft.**
**Union Sulphur Co. No. 837 fee, sec. 20-9s-10w. R.U.**

### Tepetate—Acadia Parish

**Continental Oil Co. No. 1 Ardoin, sec. 23-7s-2w. T.D. 1,520 ft.; rng. csg.**
**Continental Oil Co. No. 7-A Homeseekers sec. 29-7s-2w. Drlg. sd. and sh. 7,933 ft.**
**Continental Oil Co. No. 8-A Homeseekers Dev. Co., sec. 29-7s-2w. Loc.**
**Continental Oil Co. No. 1 Stoddard, sec. 29-7s-2w. T.D. 8,317 ft.; 5¾-in. csg. on bottom; I.P. 116 B.P.D. through ⅛-in. ck.**
**Continental Oil Co. No. 1-B Veronie, sec. 28-7s-2w. Drlg. sd. 6,611 ft.**
**Continental Oil Co. No. 1-B Young, sec. 29-7s-2w. Drlg. L. and sh. 7,500 ft.**

### White Castle—Calcasieu Parish

**Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. Drlg. sd. 396 ft.**

## S. LOUISIANA WILDCATS

### Acadia Parish

**H. E. Dalton No. 1 Setting, sec. 17-7s-1w Drlg. sh. 4,650 ft.**
**Humble O. & R. Co. No. 1 Nordyke, sec. 23. Drk.**

### Allen Parish

**Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in. csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,-766 ft.**

### Avoyelles Parish

**Frost Oil Co. No. 1 Hines Lumber Co sec. 3-3n-4e. Drk.**
**George Conover No. 1 Purdy Heff, sec. 36-2n-3e. Drk.**

### Calcasieu Parish

**Buhler Oil Co. No. 2 Faiszt, sec. 26-8s-10w. Old T.D. 4,412 ft.; abd.**
**Wilfred Lahaye No. 1 Bass, sec. 9-10s-12w. S.D. 80 ft.**

### Cameron Parish

**Magnolia Pet. Co. No. 1, Johnson Bayou, sec. 16-15s-14w. T.D. 7,497 ft.; fsg.**
**Magnolia Pet. Co. No. 1 Raymond Leban sec. 13-12s-9w. 13⅜-in. csg. 3,262 ft.; drlg. sh. 6,340 ft.**
**Pure Oil Co. No. 1, Mallard Bay, sec. 23-13s-3w. 18⅝-in. csg. 1,499 ft.; drlg. sh. 5,298 ft.**
**Southern Sulphur Co. No. 2 State, sec. 29-15s-10w. S.D. 250 ft.**

### East Baton Rouge Parish

**Cavalier Oil Co. No. 1 Vingnes, sec. 46-8s-2e. T.D. 5,655 ft.; washing over D.S.**
**Cavalier Oil Co. No. 1 Young, sec. 62-4s-1w. Drk.**

### East Feliciana Parish

**East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. and S.D.**

### Bayou Blue—Iberville Parish

**Humble O. & R. Co. No. 1 Wilbert, sec. 67-9s-11e. 16-in. csg. 173 ft.; recovered 720 ft. of S.W. and mud on D.S.T., 2,045-78 ft.**

### Iberia Parish

**Jefferson Lake Oil Co. No. 409 Lake Pigneur, Twp. 12s-3e. Sh. 5,910 ft.; no report.**
**Texas Co. No. 1-B State, Vermillion Bay sec. 16-15s-6e. T.D. 9,243 ft.; P.B. 8,-893 ft.**

### Jefferson Parish

**Triangle Oil Co. No. 1 Conroe, sec. 13-12s-11e. S.D. 705 ft.**

### Jefferson Davis Parish

Shell Pet. Corp. No. 1 Joe Sturdivant sec. 25-10s-4w. 10¾-in. csg. 2,616 ft.; T.D. 9,730 ft.; prep. to core.

Stanolind O. & G. Co. No. 1 C. E. Britt sec. 15-10s-3w. 9⅝-in. csg. 8,842 ft.; T.D. 9,944 ft.; D.S. stuck; P.B. and sdtrkd. drlg. sh. 8,966 ft.

### Lafourche Parish

Wm. Helis No. 1 City of New Orleans, sec. 19-23s-23e. Drlg. 100 ft.

### Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

### Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25-32s-19. Drlg. sh. 865 ft.

Tide Water Oil Co. No. 2 Manhattan Fruit Co., sec. 34-21s-22e. T.D. 202 ft.; W.O.C.

### St. Bernard Parish

John Cartwright No. 1 Meraux Nunez sec. 19-13s-12e. T.D. 6,501 ft.; washing to bottom.

Gulf Oil Corp. No. 1 Lake Lery, sec. 28-14s-14e. Drlg. sh. 1,630 ft.

Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. S.D. 42 ft.

### St. James Parish

Shell Pet. Corp. No. 2 Colonial Sugar, 4,800 ft. N of No. 1, sec. 15-12s-5e. Drlg. sh. 3,710 ft.

### St. Landry Parish

Stanley Thompson No. 1 Lewis, sec. 29-5s-6e. Drlg. sd. and gravel 920 ft.

Superior Oil Prod. Co. No. 1 Savoie, sec. 26-8s-3e. R.U.

### St. Martin Parish

Shell Pet. Corp. No. 1 Hefla Ld. Co., sec. 38-8s-5e. R.U.

Texas Co. No. 1 Bayou Sale, sec. 23-17s-9e. Drlg. sh. 3,830 ft.

### St. Mary Parish

Texas Co. No. 1, Horse Shoe Bayou, sec. 40-17s-9e. Drlg. sh. 7,610 ft.

### Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender, sec. 23-19s-19e. Drlg. sh. and sd. 6,458 ft.

Shell Pet. Corp. No. 1-B Realty, sec. 18-17s-15e. R.U.

### Vermilion Parish

Continental Oil Co. No. 1 O. C. Hebert, sec. 20-12s-3e. T.D. 11,732 ft.; circulating with mud; well tried to blow out; fsg. for stuck D.S.; hole cleaned to 10,680 ft.; set cmt.; P.B. to 10,800 ft.; milling out csg. to sdtrk. at 10,837 ft.

Delcambre & Shelton No. 1 Delcambre, sec. 63-12s-6e. S.D. 2,708 ft.

Del-Shell Exploration Co. No. 1 Landry hrs., sec. 1-13s-4w. S.D. 2,000 ft.

Louisiana Land & Expl. Co. No. 1 La. Fur Co., sec. 16-15-1e. Bldg. foundations

Stanolind O. & G. Co. No. 1 Fred Stovall. 13⅜-in. csg. 1,980 ft.; W.O.C.

# TEXAS

Week Ending October 31

## GULF COAST FIELDS

### Raccoon Bend—Austin County

Humble O. & R. Co. No. 6-C Grawunder, Wm. C. White Sur. T.D. 4,110 ft.; 7-in. csg. 4,066 ft. Failed to pump. R.U. to pump.

Humble Oil & Ref. Co. No. 7-B Hardy, J. E. Groce Sur. T.D. 4,095 ft.; I.P. 14 B. P.H. through ¼-in. ck.

Humble O. & R. Co. No. 8-B Hardy, R. Hardy Subd. 9⅝-in. csg. 1,150 ft.

Humble Oil & Ref. Co. No. 10 Wilson, Wm. Harvey Sur. T.D. 3,307 ft.; I.P. 271 B. P.D.; ¼-in. ck.

Humble O. & R. Co. No. 9 Wilson, Wm. Harvey Sur. Drlg. sh. 767 ft.

### Hastings—Brazoria County

W. L. Goldston No. 1 fee, Block 6, B.B.B. &C. Sur. Top gas sd. 5,084 ft. T. D. 6,165 ft.; P.B. 6,135 ft.; I.P. 598 B.P.D.; ¼-in. ck.; T.P. 600 lbs.; C.P. 850 lbs.

W. L. Goldson No. 2 fee, B.B.B.&C. Sur. Drk.

Humble O. & R. Co. No. 4 Brown, W. H. Snyder Sur. Cg. gas sd. 6,038 ft.

Humble O. & R. Co. No. 6 Brown, W. H. Snyder Sur. Drk.

Humble Oil & Ref. Co. No. 1 Geisler, Block 34, H.T.&B. Sur. T.D. 6,080 ft.; 7-in. csg. 5,817 ft.; I.P. 25 B.P.H.; ¼-in. ck.

Humble Oil & Ref. Co. No. 1 King, H.T.&B. Sur. Drk.

Stanolind O. & G. Co. No. 1 Floyd Brown, H.T.&B. Sur. No. 29, 10¾-in. csg. 1,846 ft.; drlg. sh. 5,161 ft.

Stanolind O. & G. Co. No. 1 Margaret Kidd, B. T. Masterson Sur. Drlg. sh. and L. 2,674 ft.

Stanolind O. & G. Co. No. 3 Drodgemeyer, H.T.&B. Sur. No. 36. T.D. 6,140 ft.; 7-in. csg. 6,108 ft.; I.P. 305 bbls. in 15 hrs.; ¼-in. ck.

Stanolind O. & G. Co. No. 5 Ford, A.C.H.& B. Sur. No. 1 R.U.

Stanolind O. & G. Co. No. 6 Ford, A.C.H.& B. Sur. No. 1. 16-in. csg. 90 ft.; 10¾-in csg. 1,870 ft.; T.D. 6,080 ft.; 7-in. csg. 5,994 ft.; W.O.C.

Stanolind O. & G. Co. No. 1 McRibbon, H.T.&B. Sur. No. 29. 10¾-in. csg. 1,850 ft.; W.O.C.

Stanolind O. & G. Co. No. 1 Sheffield, H. T.&B. Sur. No. 29. Drk.

Stanolind O. & G. Co. No. 1 Surface, B.B. B.&C. Sur. 10¾-in. csg. 1,873 ft.; drlg. sd. 6,038 ft.

Stanolind O. & G. Co. No. 7 Williams, A.C. H.&B. Sur. No. 1. Loc.

### Lockridge—Brazoria County

Gulf Oil Co. No. 2-A Wilkes and Smith, J. Robinson Sur. T.D. 5,999 ft.; 9⅝-in. csg. 5,875 ft.; recovered 4,000 ft. of P.L. oil on D.S.T. from 6,340-67 ft.

### Manvel—Brazoria County

Bowles & Borsodi No. 4 Norvell Co., Inc., H.T.&B. Sur. No. 23. R.U. and S.D.

Burton Drlg. Co. No. 1 Bankers Mortgage, E. Little Sur. Drk.

Harrison & Abercrombie No. 4 Lewellen, A.C.H.&B. Sur. Drlg. sh. and L. 3,754 ft.

Sterling Oil & Ref. Co. No. 1 Hamilton, E. Little Sur. Drlg. sh. 1,020 ft.

E. A. Stone No. 1 Nichols, E. Little Sur. Drk.

Texas Co. No. 1 A. Ellis, H.H. Little Sur. T.D. 5,738 ft.; P.B. 3,450 ft.; W.O.C.

Texas Co. No. 6 Rash, T. Spraggins Sur. T.D. 4,163 ft.; P.B. 4,100 ft.; W.O.C.

Texas Co. No. 3-B Wray, T. Spraggins Sur. Drlg. sh. and L. 3,522 ft.

### Old Ocean—Brazoria County

Harrison and Abercrombie No. 3 Bernard River, Charles Breen Sur. Drk.

### West Columbia—Brazoria

Sterling O. & G. Co. No. 1 J. A. Phillips, Geo. Kennilee Sur. Drk.

Texas Co. No. 14 Abrams, George Tenille League Sur. T.D. 3,061 ft.; P.B. 3,191 ft.; salt 4,325 ft.

### Heyser—Calhoun County

Humble Oil & Ref. Co. No. 3 Welder, J. M. Rios Sur. Drlg. sh. 1,521 ft.

Humble O. & R. Co. No. 4-B Welder, A. Sisners Sur. Abd. loc.

Humble Oil & Ref. Co. No. 5 P. H. Welder, J. N. Rios Sur. Drlg. sh. 2,678 ft.

Fertilla Oil Co. No. 1 R. H. Welder, A. Sisneros Sur. 10¾-in. csg. 554 ft. T.D. 5,486 ft.; 7-in. csg. on bottom; I.P. 19 B.P.H. through ¼-in. ck.; T.P. 550 lbs.; C.P. 760 lbs.

Fortilla Oil Co. No. 5 Welder, A. Sisneros Sur. T.D. 5,482 ft.; 7-in. csg. 5,477 ft.

### Anahuac—Chambers County

Gulf Oil Corp. No. 4 Knowles, sec. 48, H. &T.C. Sur. 7-in. csg. 7,081 ft.; P.B. 6,891 ft.; milling out of csg. 6,866 ft.

Gulf Oil Corp. No. 5 Knowles, sec. 48, H. &T.C. Sur. Drk.

Humble Oil & Ref. Co. No. 1-C Middleton, A. Middleton Sur. 10¾-in. csg. 1,527 ft. cg. sh. 7,070 ft.

Humble O. & R. Co. No. 20 Middleton, sec. 64, H.&T.C. Sur. T.D. 7,103 ft.; rng. csg.

Humble O. & R. Co. No. 24 Middleton, sec. 58, H.&T.C. Sur. T.D. 7,085 ft.; 5½-in. csg. 7,057 ft.; W.O.C.

Humble O. & R. Co. No. 15 White, J. McGahey Sur. T.D. 7,045 ft.; 5½-in. csg. 7,013 ft.; flwd. 12 B.P.H.; killed well; pulling tbg.

Sun Oil Co. No. 23 White, J. McGahey Sur. Drlg. sh. and L. 5,523 ft.

### Cotton Lake—Chambers County

Glenn H. McCarthy No. 1 McCarthy No. 4 Kilgore, J. Townsed Sur. Cg. sdy. sh. 6,250 ft.

Humble O. & R. Co. No. 1, Howard Winfree Sur. 10¾-in. csg. 1,075 ft. T.D. 6,311 ft.; 7-in. csg. 6,309 ft.; tstd. 630 ft. of oil, 270 ft. of S.W. on D.S.T. 6,294-97 ft.; P.B. 6,280 ft.; W.O.C.

Humble O. & R. Co. No. 2 Howard, Winfree Sur. Loc.

Glenn H. McCarthy No. 1 Kirby, Chambers Co. Sch. Ld. Co. Sur. R.U.

### Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 4 State, due S of Sun Oil Co. No. 1 Chambers in Turtle Bay. Drk.

Sun Oil Co. No. 2 Chambers, M. A. Carroll Sur. 16-in. csg. 111 ft.; drlg. sh. 4,004 ft.

### Big Creek—Fort Bend County

Gulf Oil Co. No. 71 Davis, M. Young Sur. T.D. 4,362 ft.; rng. 7-in. csg.

Jenal Oil Co. No. 3 Byron, M. Young Sur. T.D. 3,736 ft.; 7-in. csg. 2,850 ft.; swbg. showing S.W. and gas.

H. L. Patton No. 1 Bryan, M. Young Sur. T.D. 1,721 ft.; cutting and pulling screen to W.O.

Thompson Drlg. Co. No. 1 W. C. Moore, B. Wickerson Sur. Drlg. sdy. sh. 2,200 ft.

### Blue Ridge—Fort Bend County

Barnett Pet. Co. No. 1-B Blakely, Lot 7, Blk. E, Drew Sur. T.D. 3,579 ft.; P.B. 3,400 ft.; P.B. 3,100 ft.; to stdrk.

H. H. Hoffman No. 1 Lee, J. Poitevent Sur. T.D. 4,014 ft.; 7-in. csg. 3,890 ft.; set lnr.; I.P. 40 B.P.D.; pmpg.

Mills Bennett Prod. Co. No. 5 Lusher, T. Habermacher Sur. Spudded 50 ft.

Texas Gulf Prod. Co. No. 14-B Blakely, J. Poitivent Sur. Drlg. sh. 1,750 ft.

### Boling—Fort Bend County

Mack Hank Oil Co. No. 2-A Farmer, J. Scott Sur. Drlg. sh. 3,558 ft.

H. K. Spear et al No. 1 Kasperek, Simon Miller Sur. 7-in. csg. 3,960 ft.; T.D. 4,015 ft.; P.B. to test.

### Orchard—Fort Bend County

Gulf Oil Corp. No. 46 Moore, Leo Burknapp Sur. T.D. 7,892 ft.; 5-in. csg. 6,953 ft.; W.O.C.

Gulf Oil Corp. No. 48 Moore, J. Frazier Sur. Drlg. L. rk. 3,450 ft.

### Thompson-Fort Bend County

Robert Eikel No. 1 J. W. Hempel, S. Kennedy Sur. Cmtd. 5-in. csg. 5,336 ft.; T.D. 5,408 ft.; pmpg.; no gauge.

Sterling O. & R. Co. No. 2 Booth, H. Christmas Sur. T.D. 5,401 ft.; 7-in. csg. 5,350 ft. Swabbing.

### High Island—Galveston County

Stanolind O. & G. Co. No. 9-B Cade, M. Dunman Sur. Cg. sh. 5,143 ft.

Stanolind O. & G. Co. No. 58 Cade, N. Fitzsimmons Sur. Drlg. sdy. L. 4,535 ft.

Stanolind O. & G. Co. No. 59-A M. Fitzsimmons Sur. Drlg. sh. 2,383 ft.

### Dickinson—Galveston County

Coast Pet. Co. No. 4 Stewart, W. K. Wilson Sur. Spudded.

Humble O. & R. Co. No. 1 Boone, W. K. Wilson Sur. 16-in. csg. 213 ft.; drlg. sd. 4,195 ft.

Humble Oil & Ref. Co. No. 12-A Stewart, W. K. Wilson Sur. Drk.

Humble O. & R. Co. No. 11-A Stewart, A. Edwards Sur. 10¾-in. csg. 1,996 ft.; cg. sd. 8,766 ft.

Pan American Prod. Co. No. 2 Craig, W. K. Wilson Sur. Cg. sd. 8,200 ft.

Smith and MacDannald No. 1 Shelar, J. O. Jones Sur. 16-in. csg. 120 ft.; 10¾-in. csg. 981 ft.; T.D. 8,035 ft.; oil sd.; 7-in. csg. 7,985 ft.; W.O.C.

Stanolind O. & G. Co. No. 6 State River Bed. 13⅜-in. csg. 2,119 ft.; T.D. 8,050 ft.; 9⅝-in. csg. 8,046 ft. Perf. csg.; swabbing.

### Greens Lake—Galveston County

Sun Oil Co. No. 4 Hughes, W. C. M. Baker Sur. Drlg. sh. 3,719 ft.

### Arriola—Hardin County

Republic-Houston Oil Co. No. 14 fee, E. Arriola Sur. 13⅜-in. csg. 835 ft.; T.D 3,285 ft.; 9⅝-in. csg. 3,270 ft.; fsg. for rods and tbg.

Republic Prod. Co. No. 15 fee, E. Arriola Sur. Spudded.

Republic Prod. Co. No. 16 fee, E. Arriola Sur. 4,317 ft.; no report.

### Batson—Harding County

Deering et al No. 5 Hooks, Donoho Sur. R.U.

Deering et al No. 4 W. W. Cruse, F. H. Green Sur. T.D. 5,506 ft.; 7-in. csg. 5,489 ft.

### Sour Lake—Hardin County

Kirby Pet. Co. et al No. 1, Stephen Jackson Sur. A-34. T.D. 4,966 ft.; 6⅝-in. csg. 4,652 ft.; tstd. S.W. 4,531-43 ft.; P.B. 4,509 ft.; perf. csg. 4,504-68 ft. with 10 shots; flwd. 60 bbls. in 12 hrs.; ¼-in. ck.; T.P. 240 lbs.; C.P. 620 lbs.

### Fairbanks—Harris County

Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1-A Dopslauf, A. Fry Sur. Spudded 74 ft.

### Goose Creek—Harris County

Humble O. & R. Co. No. 110 Gaillard, Wm. Scott Sur. Drk.

### Mykawa—Harris County

Flanagan Oil Co. No. 1 M. J. Cowherd, Lot 260, Wm. Lovett Sur. T.D. 4,853 ft.; 7-in. csg. 4,780 ft.; T.D. 4,862 ft.; R.U. to pmp.

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

West Prod. Co. No. 1 Minnetex, Wm. Lovett Sur. Sdtrkd. 5,131 ft.; S.D. 7,178 ft.

### South Houston—Harris County

Stanolind O. & G. Co. No. 1, Dist. No. 7, H.T.&B. Sur. No. 6. R.U.

Stanolind O. & G. Co. No. Drlg. Dist. No. 47. Drk.

Stanolind O. & G. Co. No. 1, District No. 11, 10¾-in. csg. 1,449 ft.; W.O.C.

Stanolind O. & G. Co. No. 5 First National Bank, Callahan and Vince Sur. 10¾-in. csg. 1,206 ft. T.D. 4,775 ft.; 7-in. csg. 4,598 ft.; I.P. 146 bbls. in 19 hrs. through ¼-in. ck.; T.P. 240 lbs.; C.P. 130 lbs.

Stanolind O. & G. Co. No. 3 Holland and Price, H.T.&B. Sur. No. 6. 10¾-in. csg. 1,466 ft.; T.D. 4,775 ft.; 7-in. csg. 4,680 ft.

Stanolind Oil & Gas Co. No. 2 Howard, Tr. 30, H.T.&B. Sur. No. 6. Drlg. L. 1,283 ft.

Stanolind O. & G. Co. No. 2 Johnson, H.T. &B. Sur. No. 6. T.D. 4,010 ft.; tstg.

Stanolind O. & G. Co. No. 1 Kelly, H.T.& B. Sur. No. 6. 10¾-in. csg. 1,485 ft.; T.D. 4,775 ft.; 7-in. csg. 4,638 ft.; W.O.C.

### Tomball—Harris County

Duffie Smith-Koury No. 1 Hillegeist, J. Houst Sur. 10¾-in. csg. 610 ft.; drlg. sh. 4,633 ft.

Humble Oil & Ref. Co. No. 1 Briggs, E. Smith Sur. 10¾-in. csg. 947 ft.; drlg. sh. and L. 5,480 ft.

Humble O. & R. Co. No. 3 Mahaffey, J. Pruitt Sur. 10¾-in. csg. 924 ft.; T.D. 5,567 ft. Failed to flow, rig up gas lift.

Humble Oil & Gas Co. No. 1 Patterson, J. Pruitt Sur. T.D. 5,566 ft.; 7-in. csg. 5,559 ft.; W.O.C.

Humble O. & R. Co. No. 8-A Quilter, A. Senschal Sur. Sd. 105 ft.

Humble O. & R. Co. No. 1 C. Rudel, J. Pruitt Sur. Drk.

Shell Pet. Corp. No. 1 Tyson, R. Hubbard Sur. 10¾-in. csg. 926 ft. Drlg. sh. and L. 5,291 ft.

Texas Co. No. 2 S. T. Doughtie, I.&G.N. Sur. T.D. 5,564 ft.; 7-in. csg. 5,559½ ft.; comp.; no gauge.

### Amelia—Jefferson County

Humble O. & R. Co. No. 1 Phelan, C. Williams Sur. Drk.

Humble O. & R. Co. No. 1 Tyrell Combest, C. Williams Sur. 10¾-in. csg. 1,991 ft.; top sd. 6,735 ft.; 7-in. csg. 6,771 ft.; sdtrkd. at 6,555 ft.; top oil sd. 6,770 ft.; cg. sd. 6,787 ft.

Glenn H. McCarthy No. 2-B Longe, H. Williams Sur. R.U.

Glenn H. McCarthy No. 1-H Longe, H. Williams Sur. T.D. 4,990 ft.; tstd. dry gas on three D.S.T.'s from 4,525-4,606 ft.

Normandie Oil Corp. No 1 G. C. Frutzman, H. Williams Sur. T.D. 6,977 ft., oil sd.; tstd. S.W. on D.S.T. 5,935-40 ft.

Stanolind Oil & Gas Co. No. 1 Sarge, H. Williams Sur. R.U.

Texas Co. No. 1 Yount, A. Houston Sur. 10-in. csg. 1,236 ft.; drlg. sd. 7,113 ft.

### Big Hill—Jefferson County

Stanolind O. & G. Co. No. 1 Fitzhugh, McFaddin Sur. R.U.

### Fannett-Jefferson County

Gulf Oil Corp. No. 19 Thomas, W. H. Smith Sur. Drlg. sdy. sh. 3,447 ft.

### Nome—Jefferson County

Shell Pet. Corp. No. 2 Carpenter, M. E. Pevoto Sur. T.D. 832 ft.; W.O.C.

Sun Oil Co. No. 1 Longe, J. Blair Sur. Cg. sd. showing oil and gas 6,024 ft.

Sun Oil Co. No. 2 Long, John Blair Sur. T.D. 6,057 ft.; cutting and pulling 5-in. lnr.

Texas Canadian Oil Co. No. 1 Ward and Ward, A. Horton Sur. Loc.

### Cleveland—Liberty County

Gulf Oil Corp. No. 16-C Kirby. R.U.

### Hankamer—Liberty County

Gulf Oil Corp. No. 1 Bernice Hankamer. T.D. 4,331 ft.; fsg.

Gulf Oil Corp. No. 1 Weaver, A. W. Weaver Sur. T.D. 4,825 ft.; I.P. 250 bbls. of fluid per day, 80% S.W.

Gulf Oil Corp. No. 1 J. L. Weaver. Abd. 5,498 ft.

### Hull—Liberty County

Eclipse Oil Co. No. 1 Barrow. Drlg. sd. 5,014 ft.

Gulf Oil Corp. No. 71 Phoenix. T.D. 4,101 ft.; 5-in. csg. 3,731 ft.

Houston Oil Co. No. 2-B Baldwin, J. Devore Sur. T.D. 5,158 ft.; 7-in. csg. 5,050 ft.

Republic Prod. Co. No. 57 Dolbear. T.D. 3,096 ft.; tstd. 1,800 ft. of oil on D.S.T.

### Esperson—Liberty County

General Crude Oil Co. No. 21, Moores Bluff, M. Duncan Sur. T.D. 2,513 ft.; making D.S.T.

General Crude Oil Co. No. 31 Esperson, G.C.&S.F. Sur. Drlg. sh. and L. 1,580 ft.

### Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocker E. Hall Sur. 13⅜-in. csg. 1,260 ft. cg. sh. 5,456 ft.

### Hawkinsville—Matagorda County

Sun Oil Co. No. 2 Craig, T. Williams Sur. Top salt 796 ft.; drlg. salt 1,118 ft.

### Markham—Matagorda County

Harrison and Abercrombie No. 9 Kountze, sec. 23. S.D. 4,225 ft.

Powers Prod. Co. No. 5 Myers, Wm. Hadden Sur. Drlg. sh. 3,612 ft.

Superior Oil Co. No. 1-B Hawks, W. H. Gainer Sur. S.D. 6,056 ft.

Texas Gulf Prod. Co. No. 1 Hudson, Henry Parker Sur. R.U.

### Van Vleck—Matagorda County

McDaniel Drlg. Co. No. 1 C. T. Dye. M. Cummings Sur. Cg. shly. sd. 7,279 ft.

Skelly Oil Co. No. 11-B Cobb, M. Cummins Sur. T.D. 7,183 ft.; P.B. 6,100 ft.; W.O.C.

Skelly Oil Co. No. 12-B Cobb, M. Cummins Sur. Drlg. sh. 2,525 ft.

Skelly Oil Co. No. 13-B Cobb, M. Cummins Sur. Sh. and shells 1,386 ft.

### Conroe—Montgomery County

Adeltex Oil Co. No. 1 Lewellen, R. G. Hunter Sur. Drk.

Humble Oil & Ref. Co. No. 1-B Hardy, R. Kukendall Sur. T.D. 5,164 ft.; oil sd.; 5¾-in. csg. 5,124 ft.

A. U. Morrison No. 2 McComb, L. Smith Sur. 10¾-in. csg. 750 ft.; cg. 5,010 ft.; completed, no gauge.

Strake Pet. Co. No. 14 Keystone-Mills, L. Smith Sur. Coring 5,010 ft.

### Orange—Orange County

B. Turnbull No. 1 Lutcher Moore, J. Dyson Sur. T.D. 7,094 ft.; rng. 7-in. csg.

### Greta—Refugio County

Hewitt & Daugherty No. 32 Lambert, Connell Sur. Drlg. sh. 5,337 ft.

Hewitt & Daugherty No. 33 Lambert, Swisher Sur. Drlg. sh. 2,512 ft.

United Gas Co. No. 30 Lambert, Hew Sur. Drlg. sh. 5,497 ft.

United Gas Co. No. 31 Lambert, Hew Sur. Drlg. sh. 5,497 ft.

### Refugio—Refugio County

United Gas Co. No. 4 Rea. Lot 1, Block 5. T.D. 5,537 ft.; P.B. and sdtkd. Drlg. sh 6,537 ft.

### Quintana-O'Connor—Refugio County

Quintana Oil Co. No. 2 Heard, Ximines Sur. Drlg. sh. 3,275 ft.

Quintana Pet. Co. No. 40-A O'Connor, Swisher Sur. Drlg. sh. 5,397 ft.

Quintana Pet. Co. No. 6-C O'Connor, Main Sur. T.D. 5,920 ft.; 5-in. csg. 5,913 ft.; I.P. 1,300 B.P.D. through ¾-in. ck.

Quintana Oil Co. No. 40-7-C O'Connor, G. W. Main Sur. Drlg.

### Hughes—Victoria County

Portilla Oil Co. No. 6 P. H. Welder, P. Demmitt Sur. 10-in. csg. 510 ft.; drlg. 1,612 ft.

### Placedo—Victoria County

American Liberty Oil Co. No. 2 Cortes, Brownson Sur. Drlg. sh. 3,950 ft.

Barnsdall Oil Co. No. 8 Pickering and Roos, S.A.&M.G. Sur. Drlg. sh. and L. 4,042 ft.

Barnsdall Oil Co. No. 9 Pickering and Roos, S.A.&M.G. Sur. Drlg. sh. 1,700 ft.

Commonwealth Oil Co. No. 2 Prencia, J. M. Brownson Sur. T.D. 4,777 ft.; 7-in. csg. 4,759 ft.

Haynes B. Ownby No. 2 Traylor, J. M. Brownson Sur. 10¾-in. csg. 806 ft. T.D. 4,775 ft.; 7-in. csg. 4,760 ft.; failed to flow; swbng.

Magnolia Pet. Co. No. 3 Henderson and Pickering, Wm. Rupley Sur. Spudded.

Westgate Oil Co. No. 4 Mieska, J. M. Brownson Sur. 10¾-in. csg. 820 ft. T.D. 4,766 ft.; 7-in. csg. 4,756 ft.; I.P. 37 bbls. in 8 hrs. through ¼-in. ck.

### Clay Creek—Washington County

Pompkal et al No. 3 Klatte, S.D. 576 ft

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. 7-in. csg. 7,445 ft.; T.D. 7,474 ft.; tstd. S.W. on D.S.T.; P.B.

### Five Corners—Wharton County

Texas Co. No. 4-B Pierce, A. H. Pierce Sur. 10-in. csg. 1,127 ft.; drlg. sh. and L. 5,391 ft.

### Louise—Wharton County

Pure Oil Co. No. 2 Adams, T. W. Heard Sur. Drlg. L. 4,250 ft.

Pure Oil Co. No. 1 L. E. Lancaster, M. Cummings Sur. T.D. 5,157 ft.; 7-in. csg. 5,125 ft.; I.P. 259 bbls. in 16 hrs. through ¼-in. ck.

Pure Oil Co. No. 2 Macha, M. Cummins Sur. 10¾-in. csg. 1,175 ft.; W.O.C.

### Magnet—Wharton County

P. B. Watson No. 1 Sweet, Smith and McKinzie Sur., Lot 4, Blk. 84. 10-in. csg. 450 ft. Drlg. sh. and L. 4,565 ft.

### Pickett Ridge—Wharton County

Texas Crusader, Inc. No. 1 J. F. Kulbeia, J. C. Gifford Sur. 10¾-in. 600 ft.; drlg. sh. 4,547 ft.

Texas Co. No. 2 Nelson, I.&G.N. Sur. Blk. 37. Drlg. sh. and L. 3,257 ft.

### Withers—Wharton County

Texas Co. No. 14-C Withers, John Caldwell Sur. T.D. 5,560 ft.; 7-in. csg. 5,557 ft.; W.O.C.

Texas Co. No. 13-C Pierce, John Caldwell Sur. T.D. 5,563 ft.; 7-in. csg. 5,563 ft.; I.P. 111 B.P.D. on potential test through ⅛-in. ck.

Texas Co. No. 15-C Pierce, J. Caldwell Sur. R.U.

Texas Co. No. 16-C Pierce, Wm. Pettis Sur. R.U.

## GULF COAST WILDCATS

### Austin County

W. H. Mitchell et al No. 1 F. Fenner, J. Fitzgibbons Sur. Drlg. sh. 3,148 ft.

### Brazoria County

Beatty, Bowles and Borsodi No. 1 Truska, Lot 4, Blk. 8, H.T.&B. Sur. Drlg. sh. and L. 4,402 ft.

Texas Co. No. 1 Robbins, J. W. Brougham Sur. 11¾-in. csg. 4,950 ft.; T.D. 6,637 ft.; D.S. stuck; hole cleaned to 5,481 ft.

### Calhoun County

Continental Oil Co. No. 1 Austin Estate, sec. 12, Blk. H. P.B. 8,521 ft.; sdtrkd 8,471 ft.; T.D. 8,750 ft.; perf. csg. 8,686-90 ft.; drill pipe collapsed; milling on csg. 8,672 ft.

Matagorda Oil Co. No. 1 Brundet, Tr. 8, Matagorda Island. 13⅜-in. csg. at 1,826 ft.; W.O.C.

### Chambers County

Sun Oil Co. No. 1 Acron, sec. 103. T.D. 8,335 ft.; W.O.C.

Sun Oil Co. No. 2 Hamilton, J. T. White Sur. 13⅜-in. csg. 1,385 ft.; T.D. 8,869 ft.; S.D.

### Colorado County

Covie-Concord & Sterling No. 1 Mary F. South, I.&G.N. Sur., sec. 41. T.D. 6,189 ft.; 5½-in csg. 6,187 ft.; drlg. plug.

### Fort Bend County

Sloan and Zook No. 1 J. A. Brown et al, Barrett and Harris Sur. M.I.M.

### Galveston County

Shell Pet. Corp. No. 1 Maco Stewart, Spillman Sur. 9⅝-in. csg. 7,707 ft.; T.D. 10,307 ft.; lost instrument in hole; fsg.

### Grimes County

Crook Bros. No. 1 Greer, B. D. O'Conner Sur. S.D. 3,402 ft.

### Hardin County

Republic-Houston Oil Co. No. 2 Brooks G. W. Brooks Sur. (relief well). Cmtd 7-in. csg. 7,027 ft.; T.D. 7,071 ft.; fsg.

### Harris County

D. B. Cherry et al No. 1 Bert J. Dodge, Josiah Harrell Sur. S.D. 1,660 ft.

Fred Harris No. 1 J. C. Change, Donoho Sur. S.D. 90 ft.

George Lawrence et al No. 1 Zoppa, J. Farwell Sur. Drk.

Stanolind O. & G. Co. No. 1 Angelo Candelari Reels and Trobough Sur. 10¾-in csg. 1,404 ft.; T.D. 7,508 ft.; 7-in. csg. 7,499 ft.; T.D. 8,101 ft.; well blew out; now shut in; made wet gas.

### Jackson County

Steinberger Pet. Corp. No. 1 Drushel, F. Rodrigues Sur. T.D. 7,155 ft.; P.B. sdtk.: T.D. 7,130 ft.; 7-in. csg. 7,155 ft.; P.B. 4,655 ft.; perfd. csg. 4,640-50 ft.; tested wet gas; flwd. 1,500,000 ft. of gas and 15 bbls. distillate per day through 5/32-in. ck.

### Jefferson County

Sun Oil Co. No. 2 Broussard & Hebert, T.&N.O. Sur. T.D. 1,178 ft.; rng. 13⅜-in. csg.

### Lavaca County

Cole Pet. Co. No. 1 Reed-Nollkamper & Smothers Sur. S.D. 2,395 ft

Welshire Union Oil Co. No. 1-A Pohl, F. Bass Sur. Drk.

### Matagorda County

Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. Drk.

Jack Frazier No. 1 R. A. Estill, Tone and Jameson Sur. O.W.D.D.; T.D. 6,868 ft.; C.O. junk.

Strake Pet. Co. No. 1 G. T. Sargent, L. E. Parker Sur. 13⅜-in. csg. 1,607 ft.; W.O.C.

Tetts & Harris No. 1 Pierce, Lot 23, W. E. Wallace Sur. Drlg. sh. 7,429 ft.

### Montgomery County

Chapman No. 1 Foster, D. Pevy Hous. Sur. Drk.; spudded.

### Refugio County

Tide Water Oil Co. No. 1 Landgarf, J. Collyer Sur. R.U.

### Trinity County

Cortez Oil Co. No. 1 V. and R. Kennedy, J. M. Prado Sur. R.U.

### Tyler County

Republic Prod.-Houston Oil Co. No. 1 Hurd, Norman Hurd Lge. 16-in. csg. 47 ft.; W.O.C.

### Victoria County

Magnolia Pet. Co. No. 1 Willie Beck, T. &N.O. Sur. Drlg. sh. 490 ft.

Plymouth Oil Co. No. 1 Welder, S.A.&M. S. Sur. No. 153. Drlg. sh. 4,750 ft.

Plymouth Oil Co. No. 1 J. J. Welder, S. A. Balding Sur. T.D. 6,648 ft.; D.S. stuck.

### Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Roswell Oil Co. No. 1 J. Bosborn, J. Jordan Sur. S.D. 520 ft.

### Washington County

Carl Dyers No. 1 Thomas, T. Henslop Sur. T.D. 2,657 ft.; D.S. stuck; P.B. to sdtrk.

### Wharton County

Barnett Pet. Co. No. 1 Bard, J. B. Marford Sur. 10-in. csg. 950 ft.; drlg. sh. 4,878 ft.

Felmont Oil Corp. No. 1 G. Mitchell, D. Wade Sur. Drlg. sh. 7,340 ft.

Shell Pet. Corp. No. 1 Gus Sedyler, F. Biggam Sur. 8⅝-in. csg. 1,155 ft.; W.O.C.

Texas Crusader Oil Co. No. 1 fee, J. Smith & McKenzie Sur. 10¾-in. csg. 1,234 ft.; 7-in. csg. cmtd. 5,562 ft.; T.D. 5,559 ft.; flwd. oil and S.W. through csg.; no gauge.

Texas Crusader Oil Co. No. 1 Hawes and Neal, S. Castleman Sur. 10¾-in. csg. 975 ft.; abd. 6,546 ft.

## S. W. TEXAS WILDCATS

### Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. M.I.M.

Helvetia Oil Co. No. 2 S. Pratt, 333 ft. SE and SW lines tr., Garza Sur. 46. Drlg. 874 ft.

McNeil Pet. Co. No. 1 Tom, 5 mi. N of Whitsett. Cg. 823 ft.

L. G. Priest No. 1 Sanders, Garmon Sur. Loc.

Rogers & Rogers No. 1 McLain, Trevino Sur. 79. Cd. sdy. sh. S.O. 1,510-1,638 ft.; sat. oil sd. 1,638-75 ft.; set csg. 1,510 ft.; W.O.C.

### Bee County

Black Dev. Co. No. 1 Asa Jones, 330 ft. N line, 1,813 ft. E line, 286-ac. tr., Wood Sur. Drlg. 3,637 ft.

Devonian Oil Co. No. 1 Manning, 1,650 ft. NE and SE lines tr., J. Poitevent Sur. T.D. 3,862 ft.; D.&A.

Humble O. & R. Co. No. 9 McKinney, S. C. Randolph Sur. Drlg. 721 ft.

### Brooks County

Douglass & Burden, Inc., No. 1 Haller, 300 ft. S and W lines, Sur. 436. Drlg. 257 ft.

Magnolia Pet. Co. No. 1 Lasater, 330 ft. N and W lines, S. Korkill Sur. 440. Drlg. 4,176 ft.

### Burleson County

Red Bank Oil Co. No. 1 Grann, 2,875 ft. S line, 1,500 ft. E line, E. Santel Sur. S.D.; D.S. stuck 5,926 ft.

### Caldwell County

Brown Drlg. Co. No. 1 Pope, J. D. Rains Sur. Drlg. 2,439 ft.

### Duval County

Benedum & Trees Oil Co. No. 1 Sevier, 1,300 ft. S line, 980 ft. E line tr., Palo Blanquito Sur. Drlg. hd. sh. 5,087 ft.

H. H. Coffield (Frank Buttram) No. 1 Nueces Ld. & Livestock Co., 1,350 ft. N line, 1,700 ft. E line, Sur. 102. Washing to D.D.; T.D. 1,925 ft.

H. F. Gillaspie No. 1 Perez, Sur. 282. Set csg. 200 ft.; W.O.C.

Goldston et al No. 1 Welder, 330 ft. S and W lines, Sur. 217. R.U.

G. G. Grimes No. 1 Sling, 330 ft. N and E lines, 160-ac. tr., Sur. 116. T.D. 2,646 ft.; D.&A.

Intrepid Oil Co. No. 1 Parr, Sur. 26. T.D. 4,737 ft.; D.&A.

Lipscomb & Daubert No. 1 Peters, 330 ft. S line, 1,650 ft. E line, Mitigart Sur. 321. Drlg. 2,197 ft.

Mills Bennett Prod. Co. No. 3 Yates, 330 ft. N and E lines, Sur. 317. Drlg. 1,-247 ft.

Albert Plummer No. 1 Danmier, 990 ft. S line, 330 ft. W line, NE¼, Sur. 58. Drk.

Rogers & Rogers No. 1 E. J. Rogers, 3,-199.1 ft. SW line, El Mesquite Gr., 250 ft. NE line tr. Drlg. 2,140 ft.

### Edwards County

Plateau Oil Co. No. 1 R. L. Hatch, sec. 66, J. W. May Sur. Drlg. 2,436 ft.

### Fayette County

Paul Teas No. 1 Clement Vinklarek, S. Millet Lge. Drlg. hd. rks. 6,433 ft.

### Goliad County

Sun Oil Co. No. 1 Fromme, 330 ft. N line tr., 330 ft. W line, A. Martle Sur. Drlg. 1,267 ft.

### Gonzales County

M. S. Holliday No. 1 Edwards, W. W. Pace Lge. M.I.M.

### Guadalupe County

Paul Armstrong No. 1 Tiller, J. C. King Sur. S.D. 1,767 ft.

Chas. Culver No. 1 Vorphal, Geo. Edwards Sur. No report.

Detroit-Texas Dev. Co. No. 1 Carter, 625 ft. SW line, 170 ft. NW line, 3,000-ac. tr. Spudded in.

J. Harper No. 1 Loepp, Duran Sur. M.I.M.

Francis P. Hynes No. 1 Linne, 415 ft. NW line, 250 ft. SW line, 224-ac. tr., Rosse Sur. No report.

Long & Ross No. 1 Feltz, Dunn Sur. Drlg. 567 ft.

### Hidalgo County

H. J. Porter No. 1 Sweeny Estate, Lot 1, Wood Subd. No. 2. Cg. 5,073 ft.

### Jim Hogg County

Eastland Oil Co. No. 1 Vela hrs., 330 ft. S and E lines, Blk. 5, Sh. 1. Loc.

Theo. Hicks No. 1 Kohler, sec. 9, Noriscitas Gr. T.D. 3,115 ft.; S.D.

S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Locke Purnell and Gifford Oil Co. No. 3 Gallagher, 330 ft. S and W lines, Blk. 190, Pippin Subd. Cg. 2,763 ft.

Pen-Ultimo Oil Co. No. 1 Kohler, 2,640 ft. N line, 1,320 ft. W line, Blk. 9, Subd., Meracita Gr. Cg. sd. 3,121 ft.

Henry Swift et al No. 1 Holbien, Blk. 58, sec. 3, Las Animas Gr. Sd. 3,112-15 ft.; S.G.; T.D. 3,503 ft.; D.&A.

### Jim Wells County

Gist & Graddy No. 1 Owens, 660 ft. N line, midway E and W lines, Sur. 151. Set 7-in. csg. 2,340 ft.; T.D. 4,900 ft.; S.D.

Tom Graham No. 1 Luby Estate, Sh. 4, Los Presnos de Abajo Gr. T.D. 5,424 ft.; perf. 4,026-31 ft.; comp.; gasser; R.P. 1,700 lbs.

E. M. Jones No. 1 Almond, N½, Sur. 7. T.D. 5,520 ft.; D.&A.

Putnam & Stewart No. 1 Canales, cen. Blk. 32, Mosser Subd. (reinstated). No report.

### Karnes County

R. L. Barnett No. 2 fee, 568-ac. tr., Hunter. Sur. Drlg. 1,797 ft.

### LaSalle County

W. H. Vernon No. 1 Las Abias ranch, 150 ft. N line, midway E and W lines, sec. 726 ft. Drlg. 763 ft.

### Lee County

Pederson et al No. 1 Turner, David Hudson Sur. T.D. 6,560 ft.; milling 4,600 ft. to sdtrk.

### Live Oak County

J. H. Durbin No. 4 Marbach, S. Hays Sur. T.D. 902 ft.; set. 6⅝-in. csg. 896 ft.; bailing.

R. Feitner No. 1 Sanger, 990 ft. S line, 330 ft. W line, E½, Sur. 391. Sd. 2,583-96 ft.; S.O. and wtr.; drlg. 3,136 ft.

Maryland Oil Co. No. 1 Geo. West Est., Lot 399, James Vaughn Sur. Drlg. sdy. sh. 3,896 ft.

Sun Oil Co. No. 1 James, Pat McGlover Sur. M.I.M.

### Maverick County

J. N. Boicourt No. 1 Edson et al, 1,230 ft. E line, 1,120 ft. N line, Eaves Sur. 68, T.D. 542 ft.; S.D.

Rio Dev. Co. No. 1 Winchester Kelson 150 ft. W line, 750 ft. S line, E½, 130-ac. tr. T.D. 804 ft.; S.D.

### McMullen County

L. D. Armsby No. 9 Griffith, 650 ft. N line, 150 ft. NE of No. 8. T.D. 940 ft.; recmtd.; S.D.

C. B. Grimes No. 2 Sling, 330 ft. N and E lines tr., Sur. 116. Loc.

Hagen Stewart Oil Co. No. 1 Kunz, M. Holy Sur. D.&A. 1,407 ft.

Humble O. & R. Co. No. 1 Edrington, 330 ft. S and W lines, A.B.&M. Sur. 57. Loc.

C. I. Jennings No. 1 Regan, 1,070 ft. S. Frio River, 330 ft. W line, 642-a. tr., Haley Gr. S.D. 1,026 ft.

Geo. Pickett No. 1 Fisher, 2,400 ft. SE line, 11,400 ft. SW line, John Garner Sur. Drlg. 1,047 ft.

### Medina County

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.

W. H. Wycoff No. 1 Bendele, 1,275 ft. W line, 150 ft. N line, Joe Barnhart Sur. 593. Spd. in.

### Nueces County

Allen and Seaboard Oil Corp. No. 1 Chapman, 660 ft. N and E lines, sec. 36, Laureles Farm Trs., Rincon de Corpus Christi Sur. Drlg. 710 ft.

Barnsdall Oil Co. No. 1 Weil, Lot 5, McBride Part. Cg. 7,009 ft.

Fearis & Cosner No. 1 Stockton, 330 ft. S and W lines, NE¼, sec. 25. Spudded in.

O. W. Killam No. 1 Sevier, 330 ft. S and W lines, sec. 112, Pauls Subd., Driscoll ranch. T.D. 5,013 ft.; D.&A.

G. M. Richardson No. 1 Carter, C NW¼, SE¼, sec. 8, Laureles Farm Trs. Set surf. csg.; W.O.C.

### Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Spudded.

### San Patricio County

Eleanor Oil Co. No. 1 Kline, Lot 5, Blk. "C," Coleman-Fulton Pasture Subd. T.D. 6,681 ft.; perf. 6,246-52 ft.; tested fresh wtr.

Eleanor Oil Co. No. 1 W. W. Toland, sec. 15, Blk. A, Coleman-Fulton Pasture Subd. M.I.M.

Hooper-Rutherford, Inc. No. 1 J. D. Willis, 466 ft. S and W lines tr., Williamson Sur. Drk.

### Starr County

J. F. Anderson No. 1 Yzagierre, Tr. 1, Porc. 79, J. of Camargo. T.D. 2,910 ft.; resume drlg.

H. L. Bass No. 1 Haden, 3,740 ft. S line, 555 ft. W line, Sh. 47, Porc. 80. Drlg. sd. 1,267 ft.

J. H. Brower No. 1 Saenz, Sur. 363. S.D. 150 ft.

F. Davenport No. 1 Kelsey-Bass, 534 ft. S line, N 585-ac. tr., 2,856 ft. E line, Porc. 87. Set 1,000 ft. of surf. csg.; no report.

Davenport-Slick-Urschel No. 1 Slick Est., Davenport ranch, sec. 485. Sd. 3,837-55 ft.; T.D. 4,512 ft.; W.O.O.

Double D Oil Co. No. 1 Kelsey-Bass, N¼, Porc. 87. T.D. 5,700 ft.; S.D.

South Coast Oil Co. No. 1 Isabel Lopez, Sh. 40-B, Porc. 80. T.D. 4,512 ft.; S.D.

Sun Oil Co. No. 1 Orr, 330 ft. N and W lines, Porc. 103. Loc.

### Webb County

B. M. Alexander No. 1 fee, Porc. 25. Loc.

French Oil Corp. No. 1 Garcia, Sur. 1111. Loc.

Foster Barnsley No. 1 Webster, 150 ft. N and E lines, S½ NE¼, Sur. 684. Recmtg. 2,275 ft.

Ivan Howard No. 2 Frost National Bank, N½, Sur. 595. Drlg. 932 ft.

La-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 26, Porcs. 12, 13 and 14. M.I.M.

Mid-Continent Pet. Corp. and Oklahoma Co. of Texas No. 1 Laubscher, 330 ft. NE and NW lines, NW¼, sec. 1,394. Fsg. 2,886 ft.

H. E. Nessly No. 1 Bruni, Sur. 450. R.U.

H. E. Nessley No. 2 Bruni, Sur. 449. T.D. 3,510 ft.; D.&A.

Starr & Killam No. 1 Bruni, Sur. 585, Loc.

Wilcox O. & G. Co. No. 1 Puig, Serna Blanca Pasture, Galan Gr., Sur. 2182. R.U.

### Zapata County

Gilcrease Oil Co. No. 1 Trevino, Blk. 5, sec. 3, Porcs. 2 and 3. T.D. 2,316 ft.; milling slips.

Jennings No. 1 Martinez, Sur. 434. T.D. 150 ft.; S.D.

## S. W. TEXAS PROVEN

### McCampbell—Aransas-San Patricio Counties

J. Nelson No. 1 Riggs, 330 ft. NW line, 213 ft. SW line, 6.46-ac. tr., Trs. 12 and 13, Blk. 16. Loc.

### Hilbig—Bastrop County

Joe E. Mills No. 1 Askew, 600 ft. NW line, 1,525 ft. SW line, 275.5-ac. tr., Wolfenberger Sur. Drlg. 1,421 ft.

### Cosden—Bee County

Elwood & Young No. 3 Barnett, John Place Sur. Drk.

### Foley—Bee County

Dirks Bros. No. 1 Holzmark, 300 ft. W line, 990 ft. S line, 100-ac. tr., S. May Sur. Sd. 4,042-71 ft.; T.D. 4,260 ft.; comp.; 30 bbls. wtr. and 15 bbls. oil per day.

L. Glasscock No. 1 Strickland, 330 ft. W line, 485 ft. S line, C. Hodge Sur. T.D. 4,100 ft.; D.&A.

### Pettus—Bee County

United Prod. Corp. No. 54 Ray, Wm. H. Moore Sur. Sd. 3,988-96 ft.; S.O.; prep. test.

### Voss—Bee County

Devonian Oil Co. No. 3 Voss, May Sur. Set sur. csg.; W.O.C.

Humble O. & R. Co. No. 1 Yoward, Chas. Shain Sur. Sd. 3,978-91 ft.; tstg.

Humble O. & R. Co. No. 3 Voss, 101-ac. Cg. 3,980 ft.

### West Tuleta—Bee County

Blanco Oil Co. and Buchanan No. 4-A Perez, sec. 9. Drlg. 2,547 ft.

### Alta Mesa—Brooks County

California Co. No. 1 Jones, La Mestina de Gonzalina Gr. D.S.T. 1,707-16 ft; showed gas with strong sulfur odor; drlg. 1,-819 ft.

California Co. No. 1 Mestina, 4,840 ft. N line, 4,185 ft. E line, B. Garcia tr. No. 6. No report.

### Alta Verde—Brooks County

L. & W. Oil Co. No. 1 Wm. Singer, Blk. 8, Sur. 436. Drlg. 311 ft.

Nordan & Morris No. 4 Singer, Sur. 312. Drlg. 447 ft.

Dick Young No. 5 Singer, Blk. 12, Sur. 312. Cg. 877 ft.

### Colmena—Duval County

Conservative Oil Co. No. 2 D.C.R.C.-Sentz, 133 ft. NE line, 1,200 ft. SE line, Blk. 12, sec. 51. Cg. sd. 1,412 ft.

Conservative Oil Co. No. 4 D.C.R.C.-Sentz, 1,585 ft. NW line, 527 ft. SW line tr., Sur. 51. T.D. 1,544 ft.; tstd. gas and S.W.; D.&A.

Hooper-Rutherford, Inc. No. 1 D.C.R.C., 330 ft. NW and SW lines, 40-ac. tr., Sur. 53. Sd. 1,379-89 ft.; tstd. dry gas; T.D. 2,502 ft.; D.&A.

### Driscoll—Duval County

Continental Oil Co. No. 12-A Sevier, Sur. 448. T.D. 3,347 ft.; comp.; 290 B.P.D.

Continental Oil Co. No. 13-A Sevier, Sur. 448. M.I.M.

### El Mesquite—Duval County

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

### Government Wells—Duval County

Highland Oil Co. No. 2 Hester, Sur. 117. Loc.

Illinois Pet. Co. No. 1 Miller, Sur. 55. Sd. 2,335-51 ft.; comp.; wet gasser; cleaning.

L. & R. Oil Co. No. 3 Webb, 12-ac. tr., Sur. 41. Loc.

Magnolia Pet. Co. No. 5 Harvill, Sur. 64. T.D. 2,358 ft.; comp.; 20 B.P.D. on pmp.

Magnolia Pet. Co. No. 4 Johnson, Sur. 44. R.U.

Magnolia Pet. Co. No. 9 Lundell, SW¼, Sur. 60. T.D. 2,360 ft.; P.B. 2,290 ft.; swbg.

Southwest Prod. Co. No. 3 Luptack, Sur. 41. Sd. 2,409-13 ft.; comp.; gasser with spray oil.

### Hoffman—Duval County

Bridwell Oil Co. and Gorman & Yoakum No. 1 Ruiz, 330 ft. S and W lines, 160-ac. tr., sec. 68. Drlg. 2,357 ft.

Rogers & Rogers No. 7 Hoffman, Sur. 118. T.D. 2,909 ft.; comp.; 70 B.P.D.

Standard of Kansas No. 6-A Hoffman, Sur. 118. Spudded.

### Kohler—Duval County

Humble O. & R. Co. No. 52 Kohler, 990 ft. N and E lines, Sur. 164. M.I.M.

### Loma Novia—Duval County

Eastern Texas Prod. Co. No. 5 Hubbard, Sur. 71. R.U.

Humble O. & R. Co. No. 48 Hubbard, Sur. 72. Drlg.

Humble O. & R. Co. No. 49-B Hubbard, Sur. 72. Drlg. 2,760 ft.

Humble O. & R. Co. No. 57-B Hubbard, Sur. 72. T.D. 2,821 ft.; P.B. 2,770 ft.; W.O. pump. equip. 2,761 ft.

Humble O. & R. Co. No. 14-C Welder, Sur. 554. Drlg. sh. 2,723 ft.

Humble O. & R. Co. No. 15-C Welder, sec. 554. Drlg. 67 ft.

Magnolia Pet. Co. No. 48 Hahl, Sur. 67. Loc.

Rosan Oil Co. No. 2-A Hubbard, sec. 71. Comp.; 262 B.P.D.; T.D. 2,798 ft.

Wilson & Leach No. 2 Wright, Sur. 72. Spudded in.

### Lopez—Webb—Duval Counties

Cox & Hamon No. 8 Peters, Sur. 322. Comp.; 15 B.P.H.; T.D. 2,107 ft.

Cox & Hamon No. 25 Peters, Sur. 322. Comp.; 20 B.P.H.; T.D. 2,137 ft.

Cox & Hamon No. 26 Peters, Sur. 322. Set csg. on sd, 2,133 ft.; comp.; 20 B.P.H.

Lundell Bros. Co. No. 1 Lopez, Sur. 734. R.U.

Magnolia Pet. Co. No. 20 Peal, Sur. 383. Comp.; 15 B.P.H.; T.D. 2,155 ft.

Magnolia Pet. Co. No. 21 Peal, Sur. 383. Set csg. 2,135 ft.; W.O.C.

Magnolia Pet. Co. No. 22 Peal, Sur. 796. Gas broke through; shut in; T.D. 2,-118 ft.

Mortimer & Springer No. 7-B Peal, Sur. 796. Comp.; 15 B.P.H. on ½-in. ck.; T.D. 2,169 ft.

Mills Bennett Prod. Co. No. 5 Billings, Sur. 113. Drlg. 1,214 ft.

Mortimer & Springer No. 9 J. Lopez, Sur. 73. Comp.; 18 B.P.H.; ½-in. ck.; sd. 2,-185-90 ft.

Mortimer & Springer No. 9 Paula Vela, Sur. 114. On sd.; W.O. supplies.

### Peters—Duval County

Rio Bravo Oil Co. No. 1-C Peters, Sur. 398. Tstd. gas-cut mud 1,788-1,802 ft.; cg. 1,818 ft.

### Seven Sisters—Duval County

Atlantic Ref. Co. No. 12-E Welder, Sur. 381. T.D. 2,441 ft.; comp.; 40 B.P.D.

Humble O. & R. Co. No. 6 Badgley, Sur. 307. Sd. 2,520-30 ft.; comp.; 27 B.P.H.

Humble O. & R. Co. No. 7 Badgley, Sur. 307. Set csg. on sd. 2,525 ft.; comp.; 10 B.P.H.

Humble O. & R. Co. No. 8 Badgley, Sur. 307. Drlg. sh. 507 ft.

Humble O. & R. Co. No. 30 Smith, Sur. 382. Sd. 2,419-33 ft.; comp.; gasser.

Humble O. & R. Co. No. 32 Smith, Sur. 382. Sd. 2,443-63 ft.; comp.; no gauge.

Humble O. & R. Co. No. 33 Smith, Sur. 382. T.D. 2,463 ft.; comp.; 19 B.P.H.

Humble O. & R. Co. No. 34 Smith, Sur. 382. Drlg. 2,473 ft.

Illinois Pet. Co. No. 10 Hazelwood, 330 ft. S and W lines, Sur. 110. Skdg. on.

Illinois Pet. Co. No. 1 Welder, Sur. 102. Sd. 2,503-12 ft.; set csg. 2,507 ft.; comp.; 150 B.P.D.

Reliance Oil & Roy. Co. No. 14 Drummond, Sur. 309. T.D. 2,533 ft.; comp.; 25 B.P.H. on ⅝-in. ck.

Texas Co. No. 3 Badgley, Sur. 307. Drlg. 520 ft.

Wellington Oil Co. No. 11-C Welder, Sur. 381. Comp.; 16 B.P.H. on ¼-in. ck.; T.D. 2,403 ft.

Wellington Oil Co. No. 28 Welder, Sur. 383. Drlg. 877 ft.

Westheimer & Daube No. 18 Campos, Sur. 224. T.D. 2,779 ft.; S.D.; W.O.O.

Westheimer & Daube No. 21 Campos, Sur. 224. No report.

### Pearsall—Frio County

Amerada Pet. Corp. (Davis) No. 1 Halff & Oppenheimer, 329-ac. tr., J. C. Clare Sur. 336½ (workover). Drlg. 5,579 ft.

Amerada Pet. Corp. No. 8 Halff & Oppenheimer, S. A. Ditch Sur. 1,104. Loc.

Amerada Pet. Corp. No. 7 Oppenheimer, 1,-320 ft. W line, 330 ft. S line, Gibson Sur. 16 (workover). Drlg. 4,587 ft.

### North Pettus—Goliad County

Magnolia Pet. Co. No. 4 Welden, 210-ac. tr., J. Gomez Sur. T.D. 3,695 ft.; comp.; 183 B.P.D. on ¼-in. ck.

Magnolia Pet. Co. No. 6 Welden, J. Gomez Sur. M.I.M.

### Mercedes—Hidalgo County

Union Sulphur Co. No. 10 American Rio Grande L. & L. Co., Blk. 50, Tr. 2,418, N. Caprisallo Dist. T.D. 8,306 ft.; P.B. 2,950 ft.

### Mestanos—Hidalgo County

McCollum Explin. Co. No. 1-B Engleman, Lot 8, sec. 249. Digging pits.

McCollum Explin. Co. No. 1 MacDougall, Lot 232, sec. 249. M.I.M.

Pantano Pet. Co. No. 1 Harding, Lot 11, Blk. 94, Missouri-Kansas L. & I. Co., Subd. Mestanos Gr. Sd. 6,590-6,640 ft.; odor oil and gas; taking core 7,820-40 ft.; blew out of control; burning.

### Samfordyce—Hidalgo-Starr Counties

Gem Oil Co. No. 4-A Seabury, Tr. 256, Porc. 38. Drlg. 2,007 ft.

Harrison and Danvers No. 1-B Guerra, Tr. 251, Porc. 38. Sd. 2,954-61 ft.; set csg. 2,982 ft.; W.O.C.

Harrison and Danvers No. 2-A Villalon, Tr. 252, Porc. 39. R.U.; S.D.

Skelly Oil Co. No. 1 F. B. Guerra, Tr. 251, Porc. 38. M.I.M.

### Bentonville—Jim Wells County

Camp Drlg. Co. No. 1-B Pope, 330 ft. S and E lines, 320-ac. tr., sec. 13. Drlg. 755 ft.

Tom Graham and Gilcrease Oil Co. No. 1 Escobas, Buffalo-Tex. Subd., Escobas ranch. R.U.

La Jita Corp. No. 2 Pope, SE¼, sec. 20. sd. 5,520-28 ft.; set 9⅝-in. csg. to D.D.

### Premont—Jim Wells County

Francis & Simonton No. 1 A. Lozana, Jr., 185 ft. E line, 165 ft. S line, Lot 111, sec. 36. Loc.

Tom Graham No. 1 Wm. Singer, C Lots 71 and 74, Sur. 76. Drlg. 2,210 ft.

### Calliham—McMullen County

Loma Oil Co. No. 45-A Jacob, Jacob Sur. No. 10. Comp.; no gauge; 955 ft.

Loma Oil Co. No. 46-A Jacob, sec. 10, Scrugham Sur. Comp.; 15 B.P.D.; 950 ft.

Loma Oil Co. No. 47-A Jacob, sec. 10, Scrugham Sur. M.I.M.

Loma Oil Co. No. 10-F Jacob, Fadden Sur. Comp.; 50 B.P.D.; T.D. 950 ft.

Loma Oil Co. No. 11-F Jacob, Fadden Sur. M.I.M.

National Pet. Co. No. 2-B Lark, Jacob Sur. Spdg. in.

### Chicon Lake—Medina County

Chas. Wagener No. 12-A Medina Irrigation Co., Hewett Sur. M.I.M.

### Ina—Medina County

Ina O. & R. Co. No. 3 Viola Wilson, Durst Sur. Drlg. 413 ft.

### Agua Dulce—Nueces County

Texon Drlg. Co. No. 1 Clara Driscoll Sevier, 466 ft. S and W lines, 880-ac. tr., W. W. Chapman Lds. Sd. 4,970-95 ft.; S.G.

United Prod. Corp. No. 2 W. W. Walton, Lot 5, Sh. 1, Chapman Lands Subd. Loc.

### Clara Driscoll—Nueces County

W. D. Hines No. 1 Sevier, 330 ft. S and E lines, W½, sec. 60. Drlg. 5,413 ft.

Wellington Oil Co. No. 1-A Sevier, 125-ac. tr., Wm. Gamble Sur. Cg. 3,965 ft.

Wellington Oil Co. of Del. No. 6 Sevier, 1,650 ft. S line, 330 ft. E line tr., Wm. Gamble Sur. Sd. 3,803-12 ft.; D.S.T.; 15 lbs. W.P., 525 ft. oil in 8 min.; set csg. 3,802 ft.; flwg. into storage; no gauge; C.P. 1,165 lbs.

### Flour Bluff—Nueces County

Gem Oil Co. No. 2 Smith, sec. 47. Set csg. 6,650 ft.; comp.; 141 B.P.D. on ⅛-in. ck.; T.D. 6,665 ft.; sd. 6,654-60 ft.

Humble O. & R. Co. No. 1 Edwards, C Lot 24, Blk. 48. Set csg. 6,657 ft.; W.O.C.

Humble O. & R. Co. No. 2 Phillips, C Lot 2, Blk. 48. Tstg. sd. 6,636-60 ft.

Humble O. & R. Co. No. 1 Rankin, C Lot 27, Blk. 47. Set csg. 6,662 ft.; W.O.C.

Humble O. & R. Co No. 1 Robertson, C Lot 23, Blk. 47. Sd. 6,613-53 ft.; 15-min. D.S.T. 6,648-65 ft.; 2,000 ft. oil, no S.W.; set csg.; top wtr. sd. 6,680 ft.

S. Paul No. 1 Moulter, Blk. 16, sec. 41, Encinal Garden tracts. Loc.

### Saxet Heights—Nueces County

R. B. Bryant No. 1 Davis & Olton, Villareal Sur. Sd. 4,051-81 ft.; comp.; no gauge.

Conroe Drlg. Co. No. 5 McBride, 58-ac. tr., McBride Part. Cg. 4,099 ft.

J. K. Culton No. 7 Baldwin, Blk. 19, Russell Farm Trs. Sd. 4,073-83 ft.; comp.; 390 B.P.D. on 5/16-in. ck.

Genaco & Roosth et al No. 1 Wilson Realty Co., cen. Lot 28, Country Club Pl. Sd. 4,070-85 ft.; set csg. 4,085 ft.; W.O.C.

Morgan Bros. No. 2 Bender, Blk. C, Harbor View Estates. T.D. 4,085 ft.; failed to flow; S.D.

W. N. Paul No. 2 Schallert, cen. Blk. "C," Harbor View Addn. S.D. 1,800 ft.; W.O.

Pedernal Oil Co. No. 1 John, Blk. 14, Oak Park Addn. S.D. 4,110 ft.; orders.

Pedernal Oil Co. No. 1 McCaughan, cen. Blk. 17, Oak Park Addn. Set csg.; sd. 4,071-84 ft.; T.D. 4,089 ft.; no report.

Port O. & G. Co. No. 2 Corpus Christi College, 39.6-ac. tr. Set sur. csg. 500 ft.; W.O.C.

Power Prod. Co. No. 1 Holt, Country Club Pl. Drlg. 300 ft.

Power Prod. Co. No. 1 Savage, cen. 1-ac. tr., Country Club Addn. Sd. 4,058-85 ft.; came in as gasser; recmtg.

J. D. Proctor No. 1 Simonton, 100 ft. E line, 68 ft. N line, 1-ac. tr., Lots 46 and 47, Country Club Pl. Sd. 4,070½-83 ft., set csg.; completing.

Reed & Cox No. 2 Lawrence, 32-ac. tr. T.D. 4,069 ft.; comp.; 100 B.P.D.

Saxet O. & G. Co. No. 1 Edwards, 32-ac. tr. S.D. 4,073-79 ft.; set csg. 4,080 ft.; reworking.

Taylor Pet. Co. No. 3 Dunn, 52.73-ac. tr. Drlg. 2,907 ft.

Taylor Pet. Co. No. 1 Incarnate Word Academy, 40-ac. tr., Villareal Sur. Sd. 4,044-75½ ft.; perf. 4,068-71 ft.; comp.; 180 B.P.D.

W. A. R. Oil Co. No. 1-A Dunn, 53-ac. tr., Villareal Sur. Sd. 4,070-86 ft.; set csg. 4,120 ft.; cleaning into pits.

Westgate Oil Co. No. 7 Sturm Est., 89-ac. tr. Drlg. 1,433 ft.

Sam Wilson No. 1 Blucher, Lot 19, Blk. 2, Oak Park Addn. Sd. 4,053-68 ft.; set csg. 4,053 ft.; comp.; 250 B.P.D.

Sam Wilson No. 1 McCaughan, C Lots 8, 9, 10, Blk. 11, Oak Park Addn. Drlg. 750 ft.

### Saxet—Nueces County

C. Andrade No. 2 Frank, 28.3-ac. tr., Sur. 416. Sd. 5,820-28 ft.; set 7-in. 5,822 ft.; W.O.C.

R. B. Bryant No. 4 Scoggin, 660 ft. S No. 3, 330 ft. W line tr., Sur. 315. Sd. 4,401-69 ft.; set csg.; W.O.C.

Conroe Drlg. Co. No. 7 Bliss, 330 ft. N and E lines, 80-ac. tr. Sd. 5,819-29 ft.; set csg. 5,829 ft.; comp.; no gauge.

Conroe Drlg. Co. No. 8 Bliss, 330 ft. S and E lines, 80-ac. tr. Set surf. csg. 1,100 ft.; W.O.C.

Conservative Oil Co. No. 2 Morgan, 330 ft. S and W lines, W½ NW¼, sec. 405. Drlg. 721 ft.

L. Glasscock No. 2 Hunter, 159-ac. tr., Page Sur. T.D. 1,160 ft.; set csg.; W.O.C.

Great States Oil Co. and Violet Oil Co. No. 2 McGregor-Belk, Sur. 311. Set csg. 5,830 ft.; sd. 5,817-30 ft.; comp.; 122 B.P.D.; T.D. 5,830 ft.

Great States No. 6 McGregor-Belk, 330 ft. E line, 920 ft. N line lse., Sur. 311. Drlg. 3,511 ft.

Hiawatha Oil Co. No. 6 Griffith, 330 ft. S line, 3,084 ft. E line, Sur. 416. Cg. 5,-870 ft.

Hiawatha Oil Co. No. 1 Hutchins-Stillwell, 175 ft. W line, 1,200 ft. S line, Sur. 311. Stdg. 4,257 ft.

Hiawatha Oil Co. No. 3 Morgan, 330 ft. S and E lines, E½, SE¼ sec. 405. Sd. 5,797-5,835 ft.; set csg. 5,835 ft.; W.O.C.

Hiawatha Oil Co. No. 3-A Smith, Blk. 35, Sheppard Farm Lots. Sd. 5,808-36 ft.; set csg. 5,836 ft.; W.O.C.

Hiawatha Oil Co. No. 2-B Smith, Blk. 35, Sheppard Farm Lots. Sd. 5,818-49 ft.; drlg. plugs in csg. set at 5,849 ft.

Hinton No. 3 Cole, 330 ft. N and E lines, 59-ac. tr., Villareal Gr. Sd. 4,840-87 ft.; set csg.; W.O.C.

Howell & Hawkins No. 1 Page Bros., 50-ac. lse., Sur. 416. T.D. 6,809 ft.; set csg. 6,492 ft.; perf. 6,328-30 ft.; tstd. S.W.; D.&A.

Houston Oil Co. No. 2-A fee, 23.6-ac. tr. Cg. 6,327 ft.

Houston Oil Co. No. 8 McGregor, 135-ac. tr., Sur. 582. Rng. tbg. 5,823 ft.

Houston Oil Co. No. 9 McGregor, 135-ac. tr., Sur. 582. Drlg.

Houston Oil Co. No. 13 Rand Morgan, 494-ac. tr. Comp.; 160 B.P.D. on 3/16-in. ck.; sd. 4,406-21 ft.

Mills Bennett Prod. Co. No. 3 Kassner, 330 ft. N and E lines, 100.91-ac. tr., SE¼ sec. 409. Sd. 4,088-93½ ft.; drlg. plugs in csg. 4,089 ft.

Mills Bennett Prod. Co. No. 2 Ordner, 1.-330 ft. N and E lines, Sur. 410. Oil sd. 4,090-4,101 ft.; tstg.

Pan American Prod. Co. No. 2-A Sagarin, 1,000 ft. W line, 330 ft. N line, 89.57-ac. tr. Sd. 5,729-49 ft.; cg. ahead.

Pan American Prod. Co. No. 2-B Sagarin, 660 ft. N No. 2-A, 330 ft. W line, C.E.I. P.&M. Sur. Drlg. 3,312 ft.

Reesto Drlg. Co. No. 2 Harmon, 20-ac. tr., Sur. 416. Comp.; 110 B.P.D. on ⅛-in. ck.

Renwar Oil Co. and Maryland Oil Co. No. 4 Rand Morgan, 660 ft. E of No. 3, 330 ft. N line lse., Surs. 315 and 592. M.I.M.

Renwar Oil Corp. No. 3 R. Morgan, 60-ac. tr., Sur. 315, Sd. 4,550-70 ft.; comp.; 5 B.P.H. on 3/16-in. ck.

Republic Nat. Gas Co. No. 14 Dunn, Blk. 37, Sheppard Farm Lots. Sd. 5,813-28 ft.; rng. tbg.

Richardson Pet. Co. No. 3 Cain & Secrist, 890 ft. N line, 330 ft. W line, Blk. 23, Russell Farm Lots. Drlg. 3,147 ft.

Richardson Pet. Co. No. 2 Harrell, Blk. 33, Sheppard Farm Lots. T.D. 6,635 ft.; P.B. to sdtrk.

Richardson Pet. Co. No. 3 Quiros, Blk. 40, Sheppard Farm Tr. (W.O.). P.B.T.D. 4,-798 ft.; old T.D. 4,879 ft.; M.I.M.

Southern Minerals Corp. No. 1 Bernson, 330 ft. N and E lines, 120.45-ac. tr., Sur. 40. Drk.

Southern Minerals Corp. No. 3 Bliss, 120-ac. tr., Stevens Sur (workover). Drlg. 5,693 ft.

Southern Minerals Corp. No. 17 Bliss, 120-ac. tr., Stevens Sur. Sd. 5,825-32 ft.; comp.; no gauge.

Southern Minerals Corp. No. 4 Mastin, 125-ac. tr., Franks Sur. 416. Cg. 4,926 ft.

Southern Minerals Corp. No. 8 Ocker, 330 ft. N and E lines, 202-ac. tr., Page Lands Sur. D.S.T. 4,840-68 ft.; 16 thrib. oil in 20 min.; set csg.; W.O.C.

Southern Minerals Corp. No. 1 Till, 990 ft. S line, midway E and W lines, 52.6-ac. tr., Page Lands Sur. Sd. 6,092-97 ft.; S.W.; cg. ahead 6,210 ft.

Texon Drlg. Co. No. 3 Carter, 219.14-ac. tr., Ward Sur. 316. R.U.

Texon Drlg. Co. No. 2 Isensee, 150 ft. N line, 112 ft. W line, 13.44-ac. tr., C. Land Sur. 404. Spudded.

Texon Drlg. Co. No. 4 McElroy, 330 ft. S and E lines, 40-ac. lse., Gallagher Sur. Drlg. 1,227 ft.

Texon Drlg. Co. No. 4 Ocker, 160-ac. tr., Surs. 402 and 316. Sd. 4,441-46 ft.; comp.; 124.5 B.P.D. on 5/32-in. ck.

Texon Drlg. Co. No. 4 Scoggin, 660 ft. S No. 2, 330 ft. E line, N 50-ac. tr., Sur. 315. Cg. 3,997 ft.

Texon Drlg. Co. No. 4 Vance, 660 ft. N No. 1, 330 ft. E line, 253.67-ac. tr., Gallagher Sur. Cg. 4,512 ft.

W.A.R. Oil Co. No. 2 Buckholt, Lot 4, Buckholt Part. Sd. 4,440-45 ft.; comp.; no gauge.

W.A.R. Oil Co. No. 1 Hoelscher, 2,870 ft. N line, 330 ft. W line, Blk. 22, J. C. Russell Farm Trs. Tstg. sd. 4,570-81 ft.

Wynne Drlg. Co. and Coker No. 2 Morgan, 160-ac. tr., G.S.&F. Sur. Sd. 6,287-99 ft.; set csg. 4,619 ft.; W.O.C.

### Plymouth—San Patricio County

Magnolia Pet. Co. No. 9 C. C. Banks, Fessendon & Hunter Sur. Sd. 6,632-38 ft.; S.W.; D.&A. 6,653 ft.

Plymouth Oil Co. No. 61-C Welder, sec. 49. T.D. 4,988 ft.; drlg. in sdtrkd. hole 5,037 ft.

Plymouth Oil Co. No. 62-C Welder, sec. 71. Sd. 5,604-17 ft.; set csg. 5,617 ft.; rng. tbg.

Plymouth Oil Co. No. 64-C Welder, sec. 71. set surf. csg. 383 ft.; S.D.

Stanolind O. & G. Co. No. 1 Corpus Christi Land Bank, Lot 2, sec. 24, Fourth Addn. D.S.T. 5,882-95 ft.; 800 ft. P.L. oil 10 min.; W.P. 85 lbs.; setting csg.

Sun Oil Co. No. 2 Rountree, Blk. 34. T.D. 6,010 ft.; P.B. to test sd. 5,653 ft.; perf. 5,648-52 ft.; swbd. dry; W.O.O.

### Taft Field—San Patricio County

Atlantic Oil Prod. Co. No. 1 Pullin, 40-ac. tr., Lot 4, Blk. 1, Second Addn. Sd. 3,993-4,000 ft.; set csg. 4,000 ft.; completing.

Conroe Drlg. Co. No. 5 Pullin, Lot 4, sec. 1. D.S.T. 4,915-32 ft.; 2,800 ft. oil; set 7-in. csg. 4,931 ft.; comp.; 252 B.P.D. on 3/16-in. ck.

Humble O. & R. Co. No. 7 Mayo, 150 ft. S and E lines, 640-ac. tr., Ottman Sur. Drk.

Humble O. & R. Co. No. 9 Mayo, 540-ac. tr., Ottman Sur. T.D. 3,995 ft.; rng. screen and lnr.

Humble O. & R. Co. No. 10 Mayo, Wm. Burns Sur. Drlg. 4,947 ft.

Shell Pet. Corp. No. 5 Pullin, 800 ft. N line, 330 ft. W line, 50-ac. tr., sec. 1, Second Addn. D.S.T. 3,980-86 ft.; 1,170 ft. oil; set csg.; W.O.C.

### White Point—San Patricio County

Earl Calloway No. 1 White Point Dev. Co., 330 ft. E line, midway N and S lines, G. Seguin Sur. No. 5. T.D. 6,512 ft.; P.B. to 3,700 ft.; drld. to sd. 4,900-11 ft.; ran 5-in. lnr. 4,898 ft.; swbg. oil; no wtr.

### Rio Grande City—Starr County

Sam Adams No. 1 Garza, Sh. 20-A, Porc. 80. S.D. 524 ft.

Coretz Oil Co. No. 5 Doyno, Blk. 1, Tr. 77-A, Porc. 81. Spudded; S.D.

Fech Oil Co. No. 1 F. Doyno, Porc. 81. Sd. 1,430-37 ft.; comp. on pmp.; no gauge.

### Santo Domingo—Starr County

Clopton & Reed No. 2 Tijerino, Lot 14, Sh. 14-C, Porc. 80. Drlg. 1,257 ft.

### Carolina-Texas—Webb County

E. J. Sawyer No. 2 Webster, 330 ft. S line, 1,980 ft. W line, Sur. 684. Fsg. 3,-050 ft.

### Cole—Webb County

L. H. Sexton No. 1 R. Benavides, Blk. 4, Sur. 22, Cole Subd. Drlg. 2,017 ft.

### O'Hern—Webb County

Cole Pet. Co. No. 1 Benavides, Blk. 483, Hale Subd. Cg. 2,857 ft.

Hamil & Smith No. 5 Benavides, Hale Subd. Drlg. 1,314 ft.

Hamil & Smith No. 10 Benavides, Hale Subd. T.D. 2,919 ft.; comp.; 20 B.P.H.

Hamil & Smith No. 11 Benavides, Blk. 367, Hale Subd. Cg. 2,877 ft.

THE UNIVERSITY OF NEBRASKA

Hamil & Smith No. 27 Benavides, Blk. 499, Hale Subd. Comp.; 100 B.P.D.; T.D. 2,950 ft.

Hamil & Smith No. 30 Benavides, Hale Subd. Drlg. 1,731 ft.

Magnolia Pet. Co. No. 14 S. Benavides, Hale Subd. T.D. 2,866 ft.; set csg.; W. O.C.

Porter & Blanchard No. 5 Benavides, Hale Subd. Drlg. 517 ft.

H. M. Reed No. 3 S. Benavides, Blk. 247 Hale Subd. T.D. 2,895 ft.; comp.; 11 B. P.H.

H. M. Reed No. 4 Benavides, Blk. 299, Hale Subd. Loc.

T. S. Reed No. 27 Benavides, Blk. 499, Hale Subd. Comp.; 100 B.P.D.; T.D. 2,-950 ft.

Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173, M.I.M.

Starr & Killam No. 1 Bruni, 330 ft. N and NW lines, Sur. 585. Spudded.

### Charco Redondo—Zapata County

W. C. Bob No. 1 Martinez, 150 ft. NW and NE lines, Blk. 22, Randado Gr. Spudded; S.D. 50 ft.

### Cuellar—Zapata County

Nordan & Morris No. 1 Cuellar, 2,970 ft. SE line, 3,150 ft. NE line, tr., Cerrito Blanco Gr. Drlg. 1,417 ft.

### Escobas—Zapata County

H. & R. Oil Co. No. 4 Garza, Blk. 11, R.U.

Frank Schnieder No. 2 Garza, Blk. 20, Douglas Subd. Comp.; 50 B.P.D.; T.D. 1,211 ft.

Frank Schneider No. 3 Garza, Blk. 20, Douglas Subd. M.I.M.

Texas Co. No. 94 Jennings, 250 ft. S No. 7, Cerrito Blanco Gr. Drk.

### Haynes—Zapata County

Gilcrease Oil Co. No. 13-B Haynes, Blk. 4, Haynes Subd. Comp.; 5 B.P.D.; T.D. 993 ft.

Gilcrease Oil Co. No. 12-C Haynes, Blk. 8, Haynes Subd. Comp.; 40 B.P.D.; T.D. 1,016 ft.

Gilcrease Oil Co. No. 13-C Haynes, Blk. 8, Haynes Subd. Comp.; 40 B.P.D.; T.D. 984 ft.

McKay & Upchurch No. 12 Haynes, Blk. 7, Haynes Subd. Comp.; 50 B.P.D.; T.D. 1,065 ft.

Nordan & Morris No. 17-A Haynes, Blk. 7, Haynes Subd. Comp.; 65 B.P.D.; T.D. 1,065 ft.

United Prod. Corp. No. 1 Haynes, Blk. 13, Haynes Subd. Tstg. 1,013 ft.

## E. C. TEXAS WILDCATS

### Anderson County

Neversuch Oil Co. No. 1 John Adams, Long Lake field. Top sd. 5,300 ft.; testing 5,311 ft.

### Angelina County

Hicks et al No. 10-B Morris, 200 ft. from N and 300 ft. from E of 120-ac. tract, J. Morris Sur., 3 mi. E of Diboll. Loc.

C. D. Neff No. 1 Long Bell Lbr. Co., J. F. Gilbers Sur., 6½ mi. NW of Huntington. S.D. 1,910 ft.

W. A. Stone et al No. 1 Southern Pine Lbr. Co., B. J. Thompson Sur., 8 mi. SE Lufkin. Drk.

### Cherokee County

A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 5,000-ft. test. Loc.

### Falls County

R. M. Hefflin No. 1 T. E. Battle, Mari Sur., 3 mi. SW of Marlin. Top Edwards 1,325 ft.; S.D. 2,082 ft.

Thirteen Oil Co. No. 1 H. R. Roberts, N. Slatter Sur., 6 mi. SE of Lott. Drlg. plug 62 ft.

### Fannin County

S. W. Ball No. 1 A. G. Byers, in W. Bailey Sur., 5 mi. N of Leonard. Drlg. 652 ft.

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. Drlg. 1,300 ft.

Valeria Oil Co. No. 1 Galloway, Wm. M. Rice Sur., 1½ mi. S of Leonard. S.D. 3,149 ft.; to core.

### Freestone County

Yancey et al No. 1 Scott, Church Lot, H. Awalt Sur. W of Stewartsville. S.D. 2,850 ft.; gas well.

Red Lake Oil Co. No. 1 M. Wheeler, J. Aguilera Sur. Set csg. 4,954 ft.

Velvet Oil Co. No. 1 Beauchamp, H. Shepard Sur., 2 mi. N of Fairfield. Spd.

### Henderson County

Cosden Oil Corp. No. 1 X. Miller, 2,660 ft. from S and 3,300 ft. from E of 1,251-acre lease, Thomas Choffin Sur., SE cor. of county. M.I.R.

McDougal et al No. 1 E. Price, M. Mathews Sur., 4 mi. S of Trinidad. Top Austin 3,484 ft.; drlg. 3,600 ft.

Sparks et al No. 1 Berry, Young Sur., 5 mi. S of Brownsville. S.D. 100 ft.

### Hunt County

Penn Oil Corp. et al No. 1 A. B. Manning, 5 mi. NE of Lone Oak, S. Owens Sur. Drk.

### Lamar County

Lowery-Cutler No. 1 E. C. Porter, 300 ft. S and E of 98-ac. tr., Thos. King Sur. Drk.

### Leon County

H. M. Ogg No. 1 O. Wiley, 800 ft. NE and 160 ft. SE of E. Devinney Sur., 1 mi. W of Buffalo. Drk.

Roth & Faurot No. 1 J. L. Shaw, O. R. Reams Sur., 5 mi. N of Centerville, R.U.

### Nacogdoches County

L. C. Bonhan et al No. 1 Angelina Lbr. Co., in J. Gomez Sur., 14 mi. SE of Nacogdoches. Drlg. 4,133 ft.

Collier et al No. 1 A. T. Mast, T. J. Lambert Sur. S.D. 242 ft.

### Navarro County

E. Bateman et al No. 1 S. P. Love. S.D. 4,223 ft.

### Rains County

Humble and Tide Water Oil Co. No. 1 Easter, R. Hotchiss Sur., 5 mi. NW Alba. Drk.

### Red River County

Carpenter Oil Co. No. 1 R. E. Anderson, S. W. Sims Sur., 3 mi. N of Clarksville. Drlg. 175 ft.

M. Petroff et al No. 1 R. G. Morris, J. Guest Sur., 2 mi. W of Detroit. S.D. 20 ft.

D. Sneed et al No. 1 Hocker-Hughes. S.D. 2,720 ft.

### Robertson County

J. E. Mills No. 1 T. Congelosi, C of 75-ac. tr. in G. A. Nixon Sur., 3½ mi. SW of Hearne. Drlg. 2,275 ft.

### Rusk County

John W. Merritt No. 1 J. A. Stallings, T. Uzzell Sur., 2½ mi. S of East Texas field. Pecan 2,680-3,015 ft.; drlg. 3,310 ft.

### Upshur County

B L. Watson No. 1 W. O. Irwin, D. Cannon Sur., NE cor. of county. Drk.

### Wood County

G. W. Nix et al No. 1 E. A. Russell, J. Delap Sur., SW cor. of county. S.D. 600 ft.

## EAST TEXAS

(Border Counties)

### Cass County

American Lib. No. A-3 Baugus, J. H. Rives Sur., Lot 12. Drlg. 2,300 ft.

American Liberty No. 4-A Baugus, J. H. Rives Sur. Drlg. 3,817 ft.

American Liberty No. 1 Dawson et al, on Dawson tr., J. H. Rives Sur. Drlg. 5,840 ft.

American Liberty No. 1 Sheppard, J. H Rives Sur. 5-in. cmt. 6,001 ft.; T.D. 6,-014 ft.; W.O.C.S.

American Liberty No. 1 Wiley, 58-ac. tr., James Davenport Sur. Drlg. 5,487 ft.

American Liberty No. 2 J. Wiley, SE cor. 58.86-ac. tr., J. Davenport Sur. Drlg. 3,-032 ft.

American Liberty No. 3 J. Wiley, 56-ac. tr., J. Davenport Sur. Drk.

American Liberty No. 4 J. Wiley, C E and W line, 56-ac. tr., J. Davenport Sur. Loc.

Bay Oil Co. No. 1 G. E. Parker, SE cor. Greenham Sur. T.D. 6,050 ft.; mud and S.W.; S.D.; W.O.

Gulf Prod. Co. No. 1 Dawson et al, NE cor. of tr., J. H. Rives Sur. Drlg. 5,737 ft.

Gulf Prod. Co. No. 2 Dawson et al, NW cor. lse., J. H. Rives Sur. Loc.

Herman L. Brown No. 2 R. P. Willis, on 21½-acre trk. in Robert Trammel Sur. Drlg. 2,152 ft.

H. L. Hunt No. 1 I.N.&C.L. Shelton, SE cor. 202-ac. tr., J. Davenport Sur. Drlg. 5,123 ft.

W. F. Lacey No. 1 J. Lewis, NW cor. B. E. Echols 17.4-ac. lse., H. Holbert Sur. Drlg. 1,555 ft

Magnolia No. 5 J. E. George, SW cor. John Collum Sur. Rng. 7-in.; T.D. 6,-080 ft.

Magnolia No. 6 J. E. George, SW cor. John Collum Sur. Drlg. 5,770 ft.

Magnolia No. 7 J. E. George, SE cor. John Collum Sur. Loc.

Magnolia No. 8 J. E. George, SE cor. John Collum Sur. Loc.

Magnolia Pet. Co. No. 12 J. E. George Est., John Collum Sur., NW cor. George tr. Loc.

Magnolia Pet. Co. No. 14 J. E. George Est., NW cor. George tr., John Collum Sur. Loc.

Magnolia No. 1 Meda Green, SW cor. J. Davenport Sur. R.U.

Magnolia No. 2 Meda Green, SW cor. J. Davenport Sur. Rng. 7-in.; T.D. 6,055 ft.

Magnolia Pet. No. 3 Meda Green, James Davenport Sur., SE cor. 73-ac. lse. R.U.

Magnolia No. 4 Meda Green, on Jesse Baugus 60-ac. tr., J. Davenport Sur. Drlg. 2,300 ft.

Magnolia No. 8 A. S. Hall, SE cor. James Young Sur. Drlg. 5,070 ft.

Magnolia Pet. Co. No. 4 Haywood, SW cor. Haywood Tr., John Collum Sur T.D. 6,015 ft.; tstg.

Magnolia Pet. Co. No. 1 J. J. Moore, J Collom Sur., 330 ft. N. 418 ft. W. SE cor. 118-ac. tr. T.D. 6,051 ft.; tstg.; dry 5,775 ft.; D.&A.

Magnolia No. 1 Noel Estate, NE cor. Wm. B. Hughes Sur. Rng. 7-in.; T.D. 6,035 ft.

Magnolia Pet. Co. No. 5 Rives, SE cor. John Collum Sur. T.D. 6,035 ft.; acidized; tstg.

Magnolia No. 6 Rives, SW cor. 425-ac. tr Robert Trammel Sur. 7-in. cmt. 6,018 ft.; T.D. 6,034 ft.; W.O.C.S.

Magnolia No. 7 Rives, NE cor. John Collum Sur. Drlg. 2,100 ft.

Magnolia No. 8 Rives, NE cor. John Collum Sur. Drlg. 5,211 ft.

Magnolia No. 9 Rives, NE cor. John Collum Sur. Drlg. 4,000 ft.

Magnolia No. 1 Wall & McLeod, NE cor. 82-ac. lse., Alex Archer Sur. Loc.

Magnolia No. 2 Wall & McLeod, NW cor. 82-ac. lse., Alex Archer Sur. Loc.

Magnolia No. 3 Wall & McLeod, SE cor. 82-ac. lse., Alex Archer Sur. Loc.

Magnolia No. 4 Wall & McLeod, SW cor. 82-ac. lse., Alex Archer Sur. Loc.

Marathon Oil Co. No. 3 R. P. Willis, 660 ft. S of Superior A-1 Chew, S.F.I.W. Sur. Comp.; flw. 21 B.P.H.; ¼-in. tbg. ck.; T.D. 5,975 ft.

R. W. Norton No. 3 A. S. Hall, NW cor. E. E. Hill 60-ac., John Collum Sur. Ran full stg. 5-in.; cmt. 6,070 ft.; T.D. 6,097 ft.; W.O.C.S.

R. W. Norton No. 2 J. T. Moore, 940 ft. W of No. 1, Wm. R. Myers Sur. 7-in. cmt. 5,942 ft.; T.D. 5,995 ft.; W.O.C.S.

Ohio Oil Co. No. 4 R. P. Willis, S.F.I.W. Sur Drlg. 5,008 ft.

Ohio Oil Co. No. 5 R. P. Willis, S.F.I.W. No. 1263 Sur. Drk.

Ohio Oil Co. No. 6 R. P. Willis, 1,226 ft. SE of No. 2, S.F.I.W. No. 1,263 Sur. Drlg. 4,800 ft.

Ohio Oil Co. No. 7 R. P. Willis, S.F.I.W. No. 1,263 Sur. Loc.

Ohio Oil Co. No. 9 R. P. Willis, S.F.I.W. Sur. No. 1,263, SW of No. 3. Drk.

Ohio Oil Co. No. 10 R. P. Willis, 933 ft. S of No. 4, S.F.I.W. No. 1,263 Sur. 16-in. cmt. 210 ft.; W.O.C.S.

Phillips Pet. Co. No. 1 Chew, SE cor. 207-ac. lse., Robt. Trammel Sur. Loc.

Phillips Pet. Co. No. 2 Chew, 1,460 ft. N, 326 ft. W, SE cor. W. D. Chew 207-ac. lse., Robt. Trammel Sur. Loc.

Phillips Pet. Co. No. 3 Chew, 2,324 ft. N, 326 ft. W, SE cor. W. D. Chew 207-ac. lse. Robt Trammel Sur. Drlg. 150 ft.

Phillips Pet. Co. No. 2 Farrier, on 200-ac. tr., Wm. Myers Sur. Drlg. 150 ft.

Phillips Pet. Co. No. 1 G. E. George, Wm. R. Myers Sur. Drlg. 4,652 ft.

Phillips Pet. Co. No. 1 Skinner, Hutchinson tr., S.F.I.W. Sur. No. 1,025. Loc.

Phillips Pet. Co. No. 2 Skinner, Hutchinson tr., S.F.I.W. Sur. No. 1,025. Drk.

Phillips Pet. Co. No. 3 Skinner, 160-ac. tr. in S.F.I.W. Sur. No. 1,025. Drlg. 150 ft.

Phillips Pet. Co. No. 1 Wartzbaugh, Robt Trammel Sur., 431 ft. S of N line and 490 ft. W of E line. Comp.; flw. 386 bbls. in 24 hrs.; ¼-in. tbg. ck.; T.D. 6,-044 ft.

Phillips Pet. Co. No. 3 Wartzbaugh, 438 ft. N and midway between E and W line of lse., Robt. Trammel Sur. Drlg. 5,920 ft.

Phillips Pet. Co. No. 1 M. Wasson, W. R. Myers Sur., 27-ac. tr. 10-in. cmt. 2,347 ft.; W.O.C.S.

Showers & Moncrief No. 5 T. H. and Sallie Stalcup, Ropert Trammel Sur. Drlg. 5,-404 ft.

Showers & Moncrief No. 6 T. D. and Sallie Stalcup, Robt. Trammel Sur., 330 ft. S and 1,338 ft. W line. Loc.

Showers & Moncrief No. 8 T. D. and Sallie Stalcup, Robt. Trammel Sur., midway between E and W line of lse. Loc

Spray Oil Co. No. 1 Scott, 25-ac. lse., midway N and S, Robt. Trammel Sur. 16-in. cmt. 225 ft.; W.O.C.S.

Spray Oil Co. No. 2 Scott Adams, 25-ac. tr., Robt. Trammel Sur. Loc.

Superior Oil No. 5-A Chew, W.D.&C.C. Track, Robt. Trammel Sur. Drlg. 4,553 ft.

Texas Co. No. 1 W. M. Hall, A. Archer Sur. 7-in. cmt. 6,033 ft.; T.D. 6,085 ft.; W.O.C.S.

Texas Co. No. 2 W. M. Hall, Alex Archer Sur., 664 ft. W of E line. Loc.

Texas Co. No. 3 W. M. Hall, Alex Archer Sur., 665 ft. W of E line and 675 ft. S of No. 2 Hall. Loc.

Texas Co. No. 4 W. M. Hall, Alex Archer Sur., 665 ft. W of E and 337 ft. N of S line of 164-acre trk. Loc.

Texas Co. No. 1 J. B. McLeod, W. A. Elliott Sur., 1,416 ft. W of E and 466 ft. S of N, 160-ac. tr. Drlg. 5,438 ft.

Texas Co. No. 2 J. B. McLeod, W. A. Elliott Sur., 440 ft. E of W and 495 ft. S of N line of 160-acre trk. Loc.

Tide Water No. 1 W. D. Chew, Robt. Trammel Sur., 150 ft. N of S line, midway between E and W lines of 20-ac lease. Derrick.

Tide Water No. 2 W. D. Chew, on 55-ac. tr., Robt. Trammel Sur. Stopped flwg.; perf. csg. 5,966-70 ft. and tstg.; T.D. 6,016 ft.

Tide Water No. 2 C. C. Chew, on 55-ac. tr., Robt. Trammel Sur. Drlg. 1,850 ft.

United Prod. Co. No. 1 Bewley, H. Holbert Sur., 330 ft. S and W NW cor. of Susie Chatten 160-ac. tr. Drlg. 4,000 ft.

United Prod. Co. No. 2 Bewley, 467 ft. N and W of So. SW cor. George 200-acre tr. Drlg. 3,800 ft.

United Prod. Co. No. 3 J. R. Jones, Ben J. Murray Sur. Loc.

United Gas No. 5 J. R. Jones on 18-ac. tr., John Collum Sur. Comp.; flw. 32 B. P.H.; ⅝-in. tbg. ck.; T.D. 6,065 ft.

United Prod. Co. No. 6 J. R. Jones Unit, SE cor. Ben J. Murray Sur. Drlg. 3,-200 ft.

United Prod. Co. No. 7 J. R. Jones Unit, SE cor. Ben J. Murray Sur. Drk.

United Prod. Co. No. 8 J. R. Jones Unit, SE cor. Ben J. Murray Sur. R.U.

United Prod. Co. No. 1 Rambo Unit, Robt. Trammel Sur., 330 ft. N and W SE cor. Maden Rambo 40-ac. tr. Drlg. 3,-000 ft.

United Prod. Co. No. 2 Rambo Unit, 330 ft. S 385 ft. W NE cor. Maden Rambo 25-ac. tr., Robt. Trammel Sur. Drlg. 2,-700 ft.

United Prod. No. 3 Rambo Unit, 385 ft. W of westerly SW cor. of Stalcup trk., Robt. Trammel Sur. Drlg. 3,824 ft.

United Prod. No. 4 Rambo Unit, 330 ft. S and 385 W NW cor. Stalcup 20-ac. trk., Robt. Trammel Sur. Drlg. 4,000 ft.

United Prod. No. 5 Rambo Unit, Robt. Trammel Sur., 150 ft. N and 311 ft. W of SE cor. H. A. Trammel 183-ac. trk. Drlg. 4,250 ft.

United Prod. No. 6 Rambo Unit, Robt. Trammel Sur., 150 N. 814 W SE cor. H. A. Thomas 83-ac. tr. Drlg. 3,171 ft.

United Prod. Co. No. 4 F. S. Simpson, on 160-ac. tr., James Young Sur. Comp.; flw. 37 B.P.H.; ⅝-in. tbg. ck.; T.D. 6,-025 ft.

United Prod. Co. No. 7 J. T. Stewart, M. Stewart 49-ac. lse., John Collum Sur. Drlg. 5,744 ft.

United Prod. No. 8 J. T. Stewart Unit, John Collum Sur. of 81.9-ac. tr. 13-in. cmt. 253 ft.; W.O.C.S.

United Prod. Co. No. 2-A J. T. Wall, Alex Archer Sur. on Wall 82-ac. tr. 7-in. cmt. 6,045 ft.; T.D. 6,080 ft.; W.O.C.S.

United Prod. No. 3-A J. T. Wall, Alex Sur., on J. T. and J. D. Wall 82-ac. trk. Drlg. 3,010 ft.

United Prod. No. 4-A J. T. Wall, Alex Sur., on J. T. and J. D. Wall 82-ac. trk. R.U.

### Harrison County

Eastern States Oil Co. No. 1 Bivens Farms Co., Wm. Pettus Sur. T.D. 3,129 ft.; D. &A.

Geyer Oil Co. No. 1 Alex Moore, 5 mi. SW of Waskom, C. W. Fields Sur. R.U.

Geyer Oil Co. No. 2-A Vincent, S. B. Harrison Sur. Drlg. 2,170 ft.

Hanover, Bergendoll et al No. 1 Buchanan, Wm. McIlvain Sur. Drlg. 4,265 ft.

H. H. Roberts et al No. 1 Z. Douglas, S. Fields Sur. Drk.

### Marion County

Tom Bell et al No. 1 David Lane, SW C Log 2 Jones Sur. 12-in. cmt. 72 ft. W.O.C.S.

Morefield & Prince No. 1 Benefield, NE cor. Robt. Potter Sur., 4 mi. W of Oil City, La. M.I.M.

M. H. Overless et al No. 1 Lizzie Henderson, 330 ft. S and E. cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S. 3,450 ft. E of NW cor. of R. Bennington Sur. M.I.M.

### Panola County

Danciger O. & R. Corp. No. 1 Tatum, SW cor. A. Bissell Sur. Drk.

Lawrel Pet. Co. No. 1 Bucknell, B. Anderson Sur. Digging pits.

Logansport P. L. Corp. No. 1 Rushing, M. Smith Sur. T.D. 2,734 ft.; tstg. some gas; acidized.

Magnolia Pet. Co. No. 1 E. A. Hull, T. Applewhite Sur. Drlg. 2,780 ft.

Matex Oil Co. No. 1 Thomas M. Alstone, 3 mi. E of Elysian field. Drk.

White-Goodwin Synd. No. 1 Hill, Winnie Mann Sur. M.I.R.

Yandel Rogers No. 1 Cameron Lbr. Co. Wm. A. Lagrone Sur., 7 mi. N of Carthage. Loc.

### Shelby County

Archie Carpenter No. 1 Green (was Farley & Sommers), J. English Sur. T.D. 3,397 ft.; chalk.; bailing to test.

Potter & Rubeling C. H. Polly No. 1, Wm. Wisner Sur. T.D. 4,050 ft.; M.I.H.R.

Red Wing Oil Co. No. 1 C. H. Herton, 54-ac. tr. in J. Dowlin Sur. Fsg. 1,888 ft.

## NORTH TEXAS WILDCATS

### Archer County

Archer Drlg. Co. No. 1 L. F. Wilson, sec. 32, A.T.N.C.L. Sur. S.D. 1,600 ft.

L. T. Burns No. 1 White, sec. 34, A.T.N. C.L. Sur. Loc.

Clark & Mayfield No. 1 W. H. Taylor, sec. 17, A.T.N.C.L. Sur. Drlg. 2,450 ft.

Clyde Gibson No. 1 O'Donohoe, sec. 95, A.T.N.C.L. Sur. R.U.R.

Rathke Oil Co., No. 1 G. P. Meade, sec. 39, "L.&M." pasture. Drlg. 1,438 ft.

### Baylor County

S. P. Morris et al No. 1-B C. T. Porter, E. Brown Sur. A-20. S.D. 1,614 ft.

### Bowie County

Woodley & Bentley No. 1 Lumpkin, J. McDermott Sur. Drlg. 3,745 ft.

### Clay County

Alexander & Goldsmith No. 1 Byers & Co. sec. 28, Byers Subd. C.O. 1,200 ft.

### Collin County

California Consld. Oil Co. No. 1 Fagg, Jas Rutherford Sur. Drlg. 2,660 ft.

Port Bolivar O. & R. Co. No. 1 Durning, Wm. Creegar Sur. S.D.O. 4,098 ft.

Sorrell et al No. 1 D. R. Clark, J. Rowland Sur. Drk.

### Cooke County

Big Indian O. & D. Co. No. 1 T. E. McFadden, G. M. Bonds Sur. A-69. Fsg. 1,975 ft.

Cain & Chandler No. 1 J. B. Burch, J. M. Williams Sur. A-658. Drlg. 2,120 ft.

Wm. D. Compton No. 1 P. Tucker, J. Barnett Sur. A-42. Spudded.

Gratz & Wilson No. 1 Dennis, S. Hernandes Sur. A-437. S.D.O. 190 ft.

B. H. Hilburn No. 1 W. A. Harris, J. Harris Sur. A-502. Drlg. 810 ft.

Long & Wolf No. 1 Hopkins, B.B.B.&C. Sur. A-150. S.D. 1,910 ft.

Wm. G. Mappas No. 1 W. R. Harpar, W. Pettit Sur. A-812. R.U.R.

C. Newburn No. 1 P. G. Dotson, W. Campbell Sur. A-238. Showing heavy black oil at 2,093-2,100 ft.; C.O.

Sinclair Prairie Oil Co. et al No. 2 A. C. McCall, H. White Sur. A-1,134. S.D. csg.; T.D. 6,950 ft.

Skelly Oil Co. No. 1 Field & Bowers, J. Dye Sur. A-140. Drlg. 1,800 ft.

### Denton County

Carlysle & Wilson No. 1 J. P. Knox, R. Howard Sur. A-542. Drlg. 170 ft.

J. C. Foster No. 1 Jeffcoat, J. West Sur. Spudded and S.D.

C. C. Minnick No. 1 C. N. Price, J. Doughtitt Sur. A-322. Derrick.

Oil Finance No. 1 J. S. Gambill. Drlg. 1,325 ft.

J. Stogner No. 1 J. Maxwell, Jno. Morton Sur. A-792. Spudded and S.D.

### Fannin County

Sam W. Ball No. 1 A. G. Ayers, W. J. Bailey Sur. Drlg. 510 ft.

### Grayson County

F. Galbreath et al No. 1 Singletary, Chas. Quillian Sur. A-989. Spudded and S.D.

Olson et al No. 1 D. R. Uitger, P. P. Cady Sur. A-301. Drlg. 1,198 ft.

Pete Shaner No. 1 Blair, R. H. Deavers Sur. A-313. S.D. 2,000 ft.; repairs.

### Jack County

Bryson O. & G. Co. No. 1 O. Loving, T.& N.O. Sur. A-852. Drlg. 870 ft.

W. H. Hammon No. 1 G. E. Evett, H. Plaster Sur. 6⅝-in. csg. 2,987 ft.; pipe collapsed; fsg.

Hanlon-Buchanan, Inc., No. 1 Galvin, E. B. Galvin Sur. A-2,440. Spudding.

Harper Pet. Corp. No. 1 G. F. Brown, S. M. Holderness Sur. A-1,532. U.R. 5 3/16-in. csg.

### Montague County

H. Bost No. 1 Lemon, S. Little A-417. Machine on ground.

Clark-Beckner No. 1 C. W. Bell, sec. 6, M.E.P.&P. Sur. Drk.

T. P. Frost No. 1 Johnson, sec. 6, H.T. R.R. Sur. Drlg. 1,050 ft.

W. E. Halbert No. 1 Petty, S. A. Southerland Sur. A-992. Drlg. 1,272 ft.

L. C. Heydrick No. 1 Cliff Dowd, G. W. Browning Sur. A-1,274. Spud. & S.D.

Jim Seeds et al No. 1 Coombs, sec. 58, M.E.P.&P. Sur. S.D.O. 2,500 ft.

### Throckmorton County

R. J. Williams No. 1 W. B. Parrott, T.E.&L. Sur., sec. 961. Drlg. 1,000 ft.

### Wichita County

A. E. Blair No. 1 Cody Est., sec. 311, Waggoner Col. Subd. S.D.O. 1,900 ft.

Box & Seaberry No. 1 Krizan, Blk. 43 Cherokee Sch. Lds. Drlg. 310 ft.

G. H. Howell No. 1 Foster, sec. 1, H.T &B. Sur., 900 ft. S.D. water

King Oil Co. No. 1 M. Stone, G.C.&S.F. Sur. A-758. Drlg. 547 ft.

T. B. Medders No. 1 Allen, H.T.&B. Sur. A-129. Drk.

Geo. Proctor No. 1 Foster, S.A.&M.G. Sur. A-273. Spdg.

L. Webb No. 1 A. J. Schulz, J. Cole Sur. A-37. Loc.

### Wilbarger County

J. B. Baker No. 1 Waggoner, sec. 65, H. &T.C. Sur. Loc.

### Young County

R. C. Albright No. 1 W. E. Steele, I.R.R Sur. A-156. Matl.

Alexander & Long No. 1 Goldston, S.P.R.R Sur. A-263. Derrick.

S. Caprito No. 1 Mrs. N. Laquey, A. Irvir Sur. A-1,779. Tstg. sd. 4,040-45 ft.

J. W. Cole No. 1 George, T.E.&L. Sur. 107. Loc.

Art Cox No. 1 J. T. Rogers, J. Ray D-1,628. P.B. to 3,660 ft. and shot with 120 qts.; C.O.

Fain-McGaha No. 1 G. P. Stewart,, Blk. 6, Y.C.S.L. Sur. Loc.

Hinson & Tidwell No. 1 Jeffery, T.E.&L. Sur., sec. 467. Drlg. 3,810 ft.

Nash & Windfohr No. 1 F. B. Lowery, S. H. Criswell Sur. A-1,297. Spdg.

Pitzer-West No. 1 Dollins, T.E.&L. Sur., sec. 606. Drlg. 2,102 ft.

A. T. Strong No. 1 Davidson, R. C. Eddleman Sur. A-1,420. Drlg. 790 ft.

R. H. Vise No. 1 Dollins, T.E.&L. Sur. 615. Drk.

C. V. Welch No. 1 Street, M. E. Criswell Sur. A-1,772. Loc.

L. W. Wickes No. 1 McCluskey, Green Sur. Drk.

Yorktex Pet. Co. No. 1 F. G. Burnett, G. W. Hills Sur. A-151. Drlg. 4,034 ft.

## WEST TEXAS WILDCATS

### Andrews County

Grisham Hunter Corp. No. 1 Ratliff & Bedford. T.D. 3,730 ft.; cmtd. off cave.

Wm. Hannigan No. 1 Logsden, 1,320 ft. from S and W, sec. 5, Blk. A-32. Rotary.

R. H. Henderson No. 1 J. E. Parker, sec. 25, P.S.L. Sur. A-43. T.D. 4,556 ft.; swabbing.

### Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. Fsg. 3,690 ft.

### Cochran County

Cascade and Honolulu Oil Corp. No. 1 E. B. Duggan, cen. Labour 13, League 55, Oldham County Sch. Ld.; pay 5,020 ft.; T.D. 5,098 ft.; P.B. 5,063 ft.; shot and bridged; C.O. made 85 bbls. in 15 hrs.

### Coke County

H. E. Ogden No. 1 E. C. Rawlins, sec. 391, Blk. 1-A, H.&T.C. Sur., 4 mi. N and 1 mi. W of Bronte. Loc.

### Crane County

Gulf Oil Corp. No. 2 W. N. Waddell, sec. 13, Blk. B-21. Drlg. 6,641 ft.

Gulf Oil Corp. No. 2 McKnight, sec. 9 Blk. B-21. T.D. 3,633 ft.; straightreaming.

Gulf Oil Corp. No. 2 Snodgrass, sec. 1, Blk. B-25. R.U.S.T.

Loffland Bros. No. 2 Tubbs, sec. 9, B-22. S.D. 4,650 ft.

Moore Bros. No. 1 Barnsley, sec. 43, Blk 32, P.S.L. Sur. Fsg. 6,190 ft.

### Dawson County

Roy Albaugh et al No. 1 J. Robinson, S.D. 5,038 ft.; to shoot.

### Ector County

Empire G. & F. Co. No. 1-C Cummins, sec 22, Blk. 45, Twp. 1n, T.&P. Sur. T.D. 4,293 ft.; to acidize; flowing by heads.

Sinclair Prairie No. 1-A Johnson, sec. 42, Blk. 42, Twp. 1s, T.&P. Sur. Drlg. 5,160 ft.

Stanolind O. & G. Co. No. 2-B Cowden T.D. 4,451 ft.; P.B. 4,435 ft.; to P.B. farther.

### Edwards County

Plateau Oil Co. No. 1 Hatch, C SE SW¼ sec. 66, Blk. B, H.E.&W.T. Sur. S.D. 2,335 ft.

### Fisher County

L. A. Daniels et al No. 1 J. J. Nickless S.D. 1,415 ft.

Forest Dev. Co. No. 1 A. M. Dry, sec 108, Blk. 2, H.&T.C. Sur. Drlg. 4,354 ft.; ran csg.

L. A. Long et al No. 1 J. L. Mayberry, sec. 56, Blk. 1, H.&T.B. Sur. Material.

### Gaines County

Amerada Pet. Corp. No. 1-A Averitt, sec 228, Blk. G, W.T.R.R. Sur. T.D. 4,814 ft.; to run csg.

Stanolind O. & G. Co. No. 1 Davis. Drlg. 4,837 ft.

Stanolind C. & G. Co. No. 1 Morrow. Drk.

### Garza County

Gartex Oil Co. No. 2 Post Est., sec. 6, Blk 5, K. Aycock Sur. T.D. 2,804 ft.; acidized.

### Glasscock County

F. Dodson et al No. 1 Carter heirs, sec. 8 Blk. 33, Twp. 3s, T.&P. Sur. T.D. 2,669 ft.; P.B. 2,664 ft.; testing.

Fleetborn Oil Co. No. 1 Black Arrow, 330 ft. from N and E, sec. 13, Blk. 34, Twp. 3s, T.&P. Sur. Spudder.

Fleetborn Oil Co. No. 1 Coulson, 330 ft. from S and 2,310 ft. from E, sec. 19, Blk. 33, Twp. 3s, T.&P. Sur. Spudder.

### Hockley County

Texas Co. No. 1 B. Slaughter, Labour 33, League 38, Zavala Co. Sch. Lds. Fsg. 3,015 ft.

### Jones County

Camp & Grady No. 1 Woodson. Drlg. 2,410 ft.

Humble O. & R. Co. No. 1 Alexander, 330 ft. from S and 1,864 ft. from W of Sub. 4, W. C. Walker Sur. Drlg. 700 ft.

Kleiner No. 1 G. Fields, 3,780 ft. N and 330 ft. S of S. Andrews Sur. Drlg. 300 ft.

K. O. T. Oil Co. No. 1 E. C. Duke, 1,820 ft. S and W, sec. 20, Blk. 15, T.&P. Sur., 1 mi. N of Hawley field. Drlg. 930 ft.

Oyster & Griffith No. 1 Bumpass, A. Jones Sur., 3 mi. SW of Truby. Drlg. 526 ft.

J. L. Reeves No. 1 Kelly, C. Martinez Sur. 1½ mi. N of Howley. R.U. machine.

Texas Inland Oil Co. No. 1 J. K. Pittard, 220 ft. from N and W, sec. 27, Orphan Asylum Lands. Loc.

Tiner et al No. 1 Rainwater, 220 ft. N and E of S½, sec. 34, Blk. 2, S.P. Sur. Loc.

Ungren & Frazier No. 1 Davis & Stemmons, Lot 7, F. M. Smith Sur. No. 3, 2½ mi. SW of Lueders.

### Pecos County

Bahan & Rhodes No. 1 Bonebrake. T.D. 1,630 ft.; R.U. spudder.

Bahan & Rhodes No. 1-B Bonebrake. 1,650 ft. from SW and NW, sec. 116, Blk. 8, H.&G.N. Sur. R.U.R.

C. A. Everitt No. 1 W. C. Tyrell, sec. 508 G. Montez & Duran Sur. Drlg. 1,736 ft.

A. H. Flaherty No. 1 Cunningham, sec. 25, Blk. 11, H.&G.N. Sur. S.D. 90 ft.

Kirk et al No. 1 Potts, sec. 6, Blk. 9, H.& G.N. Sur. S.D. 1,520 ft.

E. R. Minshall No. 1 Banker, sec. 25 Blk. 146, T.&St.L. Sur. Drlg. 2,825 ft.

Tex-Mex Oil Co. No. 1 McKee, Tr. 7, sec 24, Blk. 9, H.&G.N. Sur. Set csg.; S.D. 2,690 ft.

S. Thompson No. 1 Elsinore Cattle Co. sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. 3,649 ft.

Trans-Pecos Oil Co. No. 2 Caldwell, sec. 27, Blk. 50, T.&P. Sur. Drlg. 833 ft.

Young No. 1 Bailey, sec. 23, Blk. 178, T.C. R.R. Sur. Drlg. 466 ft.

### Presidio County

Lindeman Bros. Oil Corp. No. 1 J. R. Bledsoe & Badgley, sec. 15, Blk. 351, G.C.&S.F. R.R. Co. Sur., 2½ mi. NE of Presidio. T.D. 1,660 ft.; R.U.R.

### Schleicher County

Magnus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. to 5,779 ft.; to acidize.

### Terrell County

Ohio Oil Co. No. 1 M. H. Goode, sec. 26, Blk. 161, G.C.&S.F. Sur. Drlg. 6,562 ft.

### Terry County

Uscan Oil Co. No. 1 Brownfield, C N¼ sec. 54, Blk. K, P.S.L. Sur. Drlg. 4,400 ft.

### Tom Green County

Webb Bros. No. 1 J. F. Schrivener, Krending Sur. 1,663, 3 mi. N and E of Van Court. Drlg. 512 ft.

### Upton County

R. H. Henderson No. 1 Reese, sec. 16, Blk. 3½, C.C.S.D.&R.G.N.G. Sur. Skd. rig 25 ft. N; T.D. 300 ft.; ran pipe.

Moore Bros. No. 1 Giddings, Sub. 25, Throckmorton Co. Sch. Lds. Spudded and S.D.

### Ward County

Findley & Cherry No. 1 Sealey, sec. 54 Blk. F, G.M.M.B.&A. Sur. S.D. 125 ft.; R.U.R.

Philtop O. & G. Co. No. 1 Pure-Smith, sec 26, Blk. 34, H.&T.C. Sur. Drlg. 2,928 ft.

Prince Bros. Drlg. Co. No. 1 Monroe, sec. 52, Blk. 34, H.&T.C. Sur. Drlg. 2,856 ft.

### Winkler County

Emperor Oil Co. No. 1 Cross, sec. 4, Blk. B-11, P.S.L. Sur. S.D. 1,210 ft.

Bert Fields et al No. 1 Walton, sec. 3, Blk. C-23. T.D. 3,204 ft.; P.B. 3,180 ft.; testing.

Read & Duffey No. 1 Sealey, sec. 8, Blk. A, G.M.M.B.&A. Sur. Drlg. 3,812 ft.

### Yoakum County

Texas Pacific Coal & Oil Co. No. 1 Bennett, sec. 678, John H. Gibson Sur. T.D. 2,520 ft.; R.U.S.T.

## Rocky Mountain Runs

Production estimates for the week ending October 31 follow:

### WYOMING

| | Bbls. |
|---|---|
| Salt Creek | 16,310 |
| Big Muddy | 1,480 |
| Badger Basin | 40 |
| Black Mountain | 170 |
| Byron | 1,140 |
| Dallas Derby | 600 |
| Dutton Creek | 60 |
| Elk Basin | 330 |
| Ferris | 20 |
| Frannie | 970 |
| Garland | 500 |
| Grass Creek | 1,360 |
| Hamilton dome | 720 |
| Hidden dome | 130 |
| Hudson | 300 |
| LaBarge | 1,190 |
| Lance Creek | 6,360 |
| Lost Soldier | 1,090 |
| Mule Creek | 270 |
| Midway | 30 |
| Oregon Basin | 4,000 |
| Osage | 820 |
| Pilot Butte | 30 |
| Quealy dome | 70 |
| Rock River | 1,680 |
| South Casper | 520 |
| Poison Spider | 190 |
| Simpson Ridge | 20 |
| Teapot | 20 |
| Total Wyoming | 40,420 |

### MONTANA

| | |
|---|---|
| Buckley Border | 70 |
| Cat Creek | 750 |
| Cut Bank | 9,120 |
| Dry Creek | 50 |
| Kevin-Sunburst | 4,360 |
| Lake Basin | 40 |
| Pondera | 1,270 |
| Total Montana | 15,560 |

### COLORADO

| | |
|---|---|
| Florence | 200 |
| Fort Collins and Wellington | 310 |
| Iles dome | 3,670 |
| Moffat | 460 |
| Orchard | 70 |
| Rangely | 60 |
| Tow Creek | 190 |
| Total Colorado | 4,960 |

### NEW MEXICO

| | |
|---|---|
| Artesia | 700 |
| Cooper | 7,250 |
| Eunice | 23,920 |
| Hobbs | 24,210 |
| Hogback | 300 |
| Jal | 3,300 |
| Lea | 1,220 |
| Maljamar | 2,310 |
| Monument | 15,020 |
| Rattlesnake | 500 |
| Table Mesa | 40 |
| Total New Mexico | 78,770 |
| Total Rocky Mountain region | 139,710 |

## California Fields

*(Continued from Page 85)*

No. 4 Snow on the Temescal anticline pumping 294 bbls. of clean 24.4 gravity oil per day from 3,339 feet. It was finished with a 5-inch liner including 213 feet of perforated. In the Javon or Padre Canyon field of Ventura County Chanslor Canfield Midway Oil Co. is rigging up rotary drilling equipment for an early spud of No. 2 Oakgrove, located in section 23-3-24. This will be the company's second test in the Padre Canyon field as its No. 1 Hobson was completed as a small producer a few months ago. Continental Oil Co. should have No. 2 Hobson in this field ready for a production test within another week or 10 days as it was recently recemented at 5,210 feet after the hole had been plugged back from 5,759 feet to 5,700 feet.

Continental Oil Co., discoverer of the San Miguelito and Padre Canyon fields of Ventura County, is going to try its luck on a third wildcat which has considerable merit. The company's new test will be located in the Red Mountain district where several shallow tests have been drilled without success. None of these wildcats have been conclusive either because of mechanical trouble or because they were not drilled deep enough. In the Ventura Avenue field General Petroleum is surely but slowly overcoming mechanical trouble in No. 13 Notten which has been bottomed in the deep 57 zone at 9,510 feet. The company is at present redrilling the hole at 9,496 feet and should reach the old bottom within the next week. Associated Oil Co. also is working on a deep well scheduled for completion in the 57 zone but this test, No. 12 McGonigle, will require another 300 feet of hole as it has just passed the 9,250-foot level. In the Los Alamos district of Santa Barbara County Barnsdall Oil Co. and the Petrol Corp. are making preparations to drill new tests on the Tognazzini anticline but it may be another 30 days before either gets under way due to the necessity of building new roads and the probability that delays will be encountered because of rain. Barnsdall has already completed one good well on this structure but has not kept it on steady production due to marketing conditions and the relatively small price paid for heavy unrefinable crude oil.

## Legislative Committee Reports on Probe

AUSTIN, Tex., Nov. 2.—Laws to halt abuses by some refiners in reporting tax payments were recommended by the legislative committee which investigated conditions during the past year.

The investigators said some refineries often made payments on gasoline from illegal crude, using one permit to dispose of legitimate gasoline and another for the illegal product. Abandoned refineries were used in tax reports for the latter. Both the railroad commission and the comptroller's department are credited with great effort to stamp out such practices.

Some processors, it was said, gave bond of $25,000 but produced gasoline on which the taxes were several times that amount, then defaulted and forfeited, defrauding the state.

"Phantom" names, used in payment of levies on illegal crude and to baffle the commission in locating conservation law violators had been discovered, the committee said, but the comptroller's efforts forcing agents to make correct reports largely eliminated this.

The committee reported a single form manifest regulating oil transportation was found impossible under existing laws.

The report stated there was little need for receivers in confiscation proceedings since such matters could be handled by the commission, and termed the "formerly flagrant abuse of so-called supplemental sales" as "rackets of the first rank."

The investigators concluded with the statement that no public officials dealing with oil had been found guilty of dishonesty.

# PERSONAL

MERRILL N. DAVIS, of Bradford, Pa., vice president and secretary of the S. R. Dresser Manufacturing Company, was re-elected vice president of the Association of Gas Appliances and Equipment Manufacturers at its annual meeting in Atlantic City, N. J., last week. Mr. Davis is one of the best known men in the oil and natural gas supply business. He has been associated with the S. R. Dresser Manufacturing Company for many years and in his coast-to-coast travels for his company has made a host of friends and admirers.

V. R. GARFIAS was recently made a director of Cities Service Company. For years, Mr. Garfias has been manager of the foreign operations for Cities Service and formerly was in charge of Stanford University's petroleum engineering courses.

ROBERT W. ATHA, Mount Pleasant, Mich., has returned from New Mexico.

V. V. JACOMINI has been elected a vice president and director of the Petroleum Conversion Corporation, owners of the TVP Corporation.

DICK O'NEIL, scout for the Shell Petroleum Corporation with headquarters at Midland, Tex., is spending his vacation at Houston, Tex.

MR. and MRS. MELVIN THOMPSON have returned to the Trinidad fields after a three months' visit with friends in Petrolia and Toronto, Ontario.

BURKS WHITE, former independent oil operator in Muskegon and Mount Pleasant, Mich., areas, has returned to Mount Pleasant after a year in Mid-Continent fields of the Southwest.

ELTON PALMER, chief of a geophysical crew of 50 men working in the Eads district in Colorado for the Gulf Research Corporation, has returned to Pittsburgh, Pa. The men gave him a farewell dinner at Eads before his departure.

MR. and MRS. CHARLES D. HOFFMAN, Muskegon, Mich., spent several days last week visiting relatives and friends at their former home in Marietta, Ohio. Mr. Hoffman is field superintendent for the Reed Oil Company, Muskegon.

SID ROBERTS, manager of Venezuela Gulf Oil Company's land and water transportation departments in Venezuela, arrived in the United States last week for a three-months' vacation. After stopping for a few days in New York, Mr. Roberts will go to California.

N. R. CRAWFORD, general manager of Dowell Incorporated, has been visiting the executive offices of the company at Midland, Mich., the past week.

D. H. PUTNEY, who joined the Stratford Engineering Company of Kansas City, Mo., early this year, has been appointed chief engineer of the company.

J. T. RUSSELL, chemist of the Panhandle Eastern Pipe Line Company, has been transferred from Louisburg, Kans., to the company's compressor station at Liberal, Kans.

STUART F. HEINRITZ, editor of Purchasing, New York City publication, will be the principal speaker at the executives night meeting of the Tulsa Purchasing Agents Association, November 17. His subject will be, "Uncle Sam—Your Purchasing Agent and Mine." He was chief of the code advisory board at Washington, D. C., in 1935, during the days of NRA, and has been engaged in journalistic work bearing on purchasing for 10 years.

DR. W. WRAY LOVE, research engineer for Dowell Incorporated, attached to the Wichita Kans., office, was a recent visitor in Tulsa.

A. P. BEUTEL, assistant general manager; DR. JOHN J. GREBE, director of physical research, and C. A. CAMPBELL of the Dow Chemical Company's legal department, are visitors in the Mid-Continent area this week.

GEORGE J. GOLDEN has been elected president and E. H. MYERS vice president of the Cargo Oil Exports, Ltd. This company is engaged in exporting oil to the United Kingdom and has storage in New York harbor and offices in the Chrysler Building in New York.

HARVEY H. BLAIR, of the Hartman-Blair Oil Company, is being treated in a Wichita, Kans., hospital for injuries received while on a deer hunt in Colorado. He was reported to have fallen and slipped nearly 800 feet down a steep mountainside, suffering a severe blow over his heart as he struck a jagged rock.

H. M. HERRON, president, R. H. MORRISON and MAX THORNBURG, directors of the California-Texas Oil Company, Ltd., will make a joint inspection trip of the company's properties at Bahrein Island and on the Arabian mainland during December and January. The American oil men probably will also visit Iran and Iraq oil fields.

D. A. BURRIS, prominent independent operator in Michigan and Texas, is on an elk hunting trip in Wyoming.

GLEN PALMER, of the Simrall Pipe Line Company, and MISS MARY ZAIDINSKI were married recently and will reside in Mount Pleasant, Mich.

JOE GORDON, with the Lago Petroleum Corporation at Llagonillas, Venezuela, and his family, are visiting the United States while on their vacation.

W. A. MAY, scout and assistant superintendent for the Texas Pipe Line Company, has been promoted to superintendent, and transferred from Tyler, Tex., to Corpus Christi, Tex.

CHARLES RANKIN, formerly in the land department of the Continental Oil Company at Denver, has been made district superintendent for that company in the Rattlesnake field in northwestern New Mexico.

GEORGE MYERS, regional geologist for the state of Michigan for the Sun Oil Company, left his office in Toledo, Ohio, to make a business trip to Mount Pleasant, Mich., on Thursday, October 29.

LAWRENCE HEWITT, chief geologist for the Gulf Coast division for the Sinclair Prairie Oil Company at Houston, Tex., has been transferred to Lake Charles, La., where his company is opening new offices.

CARL MELZER addressed the Rocky Mountain Association of Petroleum Geologists at Denver on November 2 on "A Trip Along the Continental Divide from Wyoming to New Mexico." It was illustrated with natural-color motion pictures.

## Do You Remember?

From The Oil and Gas Journal Files

### 25 YEARS AGO

With an estimated monthly consumption of only 6,000 barrels of illuminating oil per month in the state of Texas, four big companies are engaged in an oil "war" for the market, which any one of them could supply with ease. The competing companies are Pierce-Fordyce, Texas, Magnolia and Standard.

The Pacific Mail Steamship Company will equip all of its ships with oil burners for fuel.

### 20 YEARS AGO

A persistent rumor is abroad that the Prairie Oil & Gas Company will soon establish a gravity basis in the purchase of oil. It now pays one price for all grades. Purchasing companies generally pooh, pooh the rumor.

A 25,000,000-foot gas well on a Gypsy Oil Company lease south of Arkansas City, Kans., is afire and thus far defies efforts to extinguish it.

Norris L. (Tip) O'Neill, baseball manager and Pennsylvania oil producer, is talked of as president of the American Association of Baseball Clubs.

Edward W. Bushnell, member of a well-known oil family, dies in Lima, Ohio.

### 10 YEARS AGO

Yount Lee Oil Company opens a deeper-sand production in the Spindletop pool with a 10,000-barrel well. The first deep-sand find was in the 2,600-foot horizon and this one is at 3,000-3,200 feet.

Frank Kistler buys the Waite Phillips ranch and the Bennett ranch near Denver, Colo., paying, it is reported, about $500,000 for the two properties.

# PARAGRAPHS

V. V. JACOMINI, of New York, vice president and general manager of the Petroleum Conversion Corporation, returned to Muskegon, Mich., last week to inspect the company's new vapor phase cracking unit.

D. GLYNN JONES, M.Sc., A.I.C., of London, England, has resigned his position with Cia Ferrocarribera de Petroleo, and joined the staff of the Petroleum Concessions, Ltd., with headquarters at City Gate House, Finsbury Square, London. Mr. Jones is a member of the American Association of Petroleum Geologists.

WILLIAM W. HESLER, formerly of Ralph M. Parsons Company, has joined Stratford Engineering Company of Kansas City, Mo. Mr. Hesler is a graduate of the University of Michigan and has done considerable development and research work on fractionation and chemical engineering with DR. G. G. BROWN of the University of Michigan.

JOHN S. FREEMAN, production superintendent, Skelly Oil Company, is the new chairman of the Tulsa chapter of the American Petroleum Institute, succeeding RAY E. MILLER, of Hanlon-Buchanan, Inc. New vice chairmen are HERBERT W. LADD, Stanolind Oil & Gas Company; J. MARSHTON LINEHAN, Cosden Pipe Line Company, and H. M. COSGROVE, executive secretary of the Tulsa Purchasing Agents Association. WILLIAM F. LOWE, secretary of the Natural Gasoline Association of America, is the chapter's new secretary-treasurer.

ODWIN CATE, in the geophysical department of the Humble Oil & Refining Company, has been transferred from Midland to Gainesville, Tex.

JOHN McLISTER, formerly of Petrolia and Bothwell, Ontario, is returning to the Ecuador fields after a holiday spent in the Canadian West.

WORTH DAFOE, attorney for McClanahan Oil Company, has returned to Mount Pleasant, Mich., after spending eight months in Arkansas and Louisiana. He was headquartered at Texarkana, Tex.

J. WALTER LEONARD, JR., president of the Rowmor Corporation which drilled the discovery well of the Crystal pool of Montcalm County, Michigan, has returned from a vacation spent in Bermuda.

ALEX FEILD, formerly petroleum engineer with the Shell Petroleum Corporation, and later with the Texas Company, is now district representative in Arkansas, North Louisiana and East Texas for the Rector Well Equipment Company.

W. L. McCLANAHAN, well-known president of the McClanahan Oil Company, made a business trip by plane to New York City from Mount Pleasant, Mich., on October 28. He was accompanied by ROBERT MUNGER, an independent operator of Bay City, Mich.

R. A. FORD, superintendent of the land department of the Canadian River Gas Company, has been promoted to general superintendent of the company, with headquarters at Amarillo, Tex., where he has been living. He succeeds GILL WOODS, who recently moved to Dallas, Tex., where he is general manager of Ford, Bacon & Davis.

H. L. DONHAISER, Michigan division superintendent of the Pure Oil Company, and G. G. JAUCHIUS, Greendale superintendent for the company, are on a game hunt for deer, moose and bear in northern Ontario about 800 miles northwest of the Straits of Mackinac.

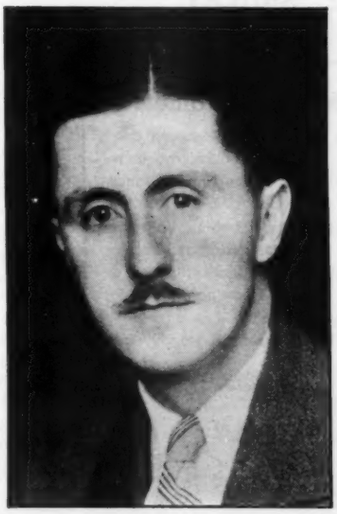
RAYMOND J. DENYVEN and JAMES L. SULLIVAN have been admitted as general partners in the firm of Francis Brothers & Company, St. Louis, Mo., dealers in investment securities and members of all the principal exchanges. Mr. Denyven has been manager of the Tulsa offices of the firm for eight years and Mr. Sullivan has been identified with the organization in St. Louis for 18 years.

JOHN M. ALDEN will be in charge when the U. S. Geological Survey takes over the supervision of the oil and gas leases on restricted Indian lands in Oklahoma and his headquarters will be in Tulsa. EDWARD E. BURNEY and ZAZEL F. MULLEN of the Indian agency at Muskogee, Okla., will be transferred to the Tulsa office and CLYDE F. GOULD of Drumright, Okla., and FRANCIS J. C. FOX of Holdenville, Okla., field men, will be a part of the new organization.

J. E. GOODERIDGE, for six years special sales representative, Union Oil Company, was recently appointed assistant to the director of sales, V. H. KELLY. Mr. Gooderidge was first employed as special sales representative July 1, 1930, and has since devoted his time to the sale and service of company products to contractors on major construction projects throughout the western portion of the United States. In his new position he will continue the supervision of this and other work in furthering the sale of both refined and lubricating oils. A native of England, Mr. Gooderidge came to the United States in 1920 and visited nearly every state in the union, during which he regained the health which had been shattered in five years of service with the Royal Air Force. His work with the Union Oil Co. has taken him actively into such jobs as Boulder Dam, Colorado River Aqueduct, All-American Canal, Bonneville Dam and San Francisco bridges.

## Mosquito in a New Role

The mosquito never held his place in the field of vocational guidance, but—well, listen. Dr. Paul H. Price, state geologist of West Virginia, was taking a course in civil engineering at West Virginia University when in 1918 he entered an officers' training camp. The war over, school looked tame to him and he headed for the Texas oil fields to make a fortune. Starting as a roughneck with the Republic Production Company at Blue Ridge, he was working as a derrick man when he was transferred to the company's producing property at Hull. Heavy rains often compelled him to wade to work. And mosquitoes! Doctor Price's vocabulary fails him. When infection followed the bites he replotted his career, let the oil fortune go hang, and returned to the university. Mosquitoes had chased him from the oil business.



*DR. PAUL H. PRICE*

Doctor Price received his A.B. in 1923, his master's degree three years later, and Cornell conferred a Ph.D. in 1930. He joined the West Virginia Geological Survey staff in 1922 under the late Dr. I. C. White, whom he affectionately calls "the grand old man." He became state geologist in 1934. He is associate professor in the department of geology of W. V. U. and he has two collections regarded as unequalled. One is coprolites from fish and the other is erratic boulders from coal. Doctor Price married Miss Helen Tapp. With their four children they reside in Morgantown.

ROBERT M. STRONG, JR., a graduate of University of California, has been elected vice president and director of the Cypress Petroleum Company.

T. T. HAWKSWORTH, president of the Devonian Oil Company of Michigan, was in Mount Pleasant, Mich., on business from October 28 to 30, and has returned to his office in Washington, D. C.

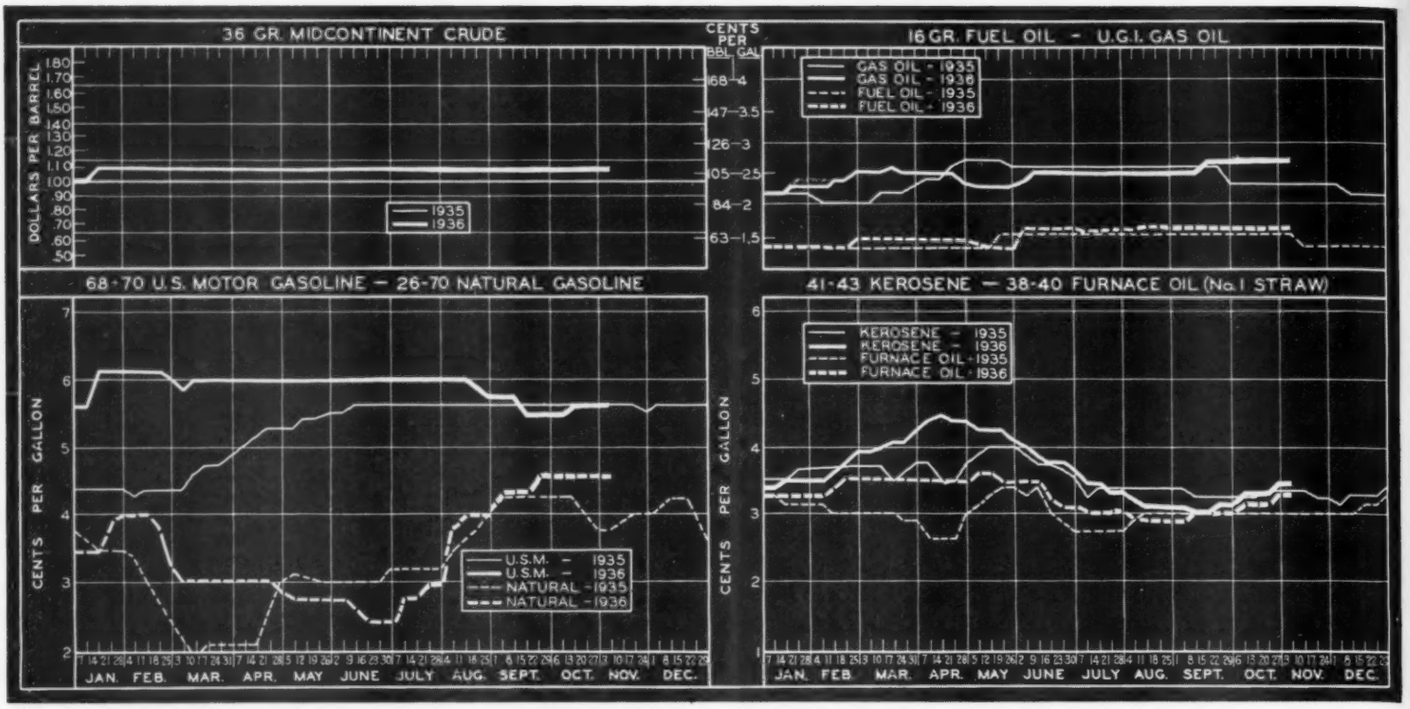
MAJ. F. R. BURNHAM, of the Burnham Exploration Company, Los Angeles, Calif., is convalescing from a recent automobile accident, but it may be several months before he returns to his office.

COLIN McFARLANE, sales engineer for Alberta of Ethyl Gasoline Corporation, gave an address to the Edmonton, Alberta, Rotary Club recently on the development of modern motors and high-compression fuels.

BURKS WHITE has returned to Mount Pleasant, Mich., for the winter after spending the spring and summer in Shreveport, La., where he was concerned with drilling of deep tests in northern Louisiana, as an independent operator.

FRANK C. OWEN, who in addition to handling production and transportation accounts of Union Oil Company, is mayor of Monterey, Calif., is receiving congratulations on completing 25 years of continuous service with the company.

DR. J. O. G. SANDERSON, consulting geologist, of Calgary, Alberta, has returned from a trip to the Brown Creek oil structure 120 miles west of Rocky Mountain House, Alberta. The trip, lasting a month, was made over mountain trails with a pack train of 20 horses.


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
CENTS PER BBL. GAL
1935
1936
16 GR. FUEL OIL - U.G.I. GAS OIL
GAS OIL - 1935
GAS OIL - 1936
FUEL OIL - 1935
FUEL OIL - 1936
68-70 U.S. MOTOR GASOLINE — 26-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1935
U.S.M. - 1936
NATURAL - 1935
NATURAL - 1936
41-43 KEROSENE — 38-40 FURNACE OIL (No. 1 STRAW)
KEROSENE - 1935
KEROSENE - 1936
FURNACE OIL - 1935
FURNACE OIL - 1936
JAN. FEB. MAR. APR. MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.

**Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)**

# *Tightening Burning Oils in Group 3 Point to Record-Breaking Market*

**By T. F. SMILEY**

Further tightening of the burning oils, with prices working toward higher levels, was conspicuous in the Group 3 refined market this week. If there was any change in tankcar gasoline it was not in the direction of greater strength, though the retail division had a sturdier undertone. The naturals, aggressively active since the first of July, were taking things a little easier. Persistent price-cutting still gave the neutral market a ragged aspect, notwithstanding a fairly satisfactory statistical position.

Although market observers said they knew of no motor fuel inventories in the Mid-Continent territory which should be designated as distress material, tankcar offerings were of such proportions as to suggest that some refiners were anxious to sell and would not be overparticular about price.

### *OLD PROBLEM REAPPEARS*

The clamor for heating oils is held accountable in some measure for the inconsequential decrease in crude runs to stills; and here emerges the same problem, in aggravated form, that bothered the refiner last year, that of meeting the demand for fuel oils without adding to unneeded accumulations of gasoline. The desire of oil companies to convert overheavy inventories of motor fuel into cash before the end of the year provides another condition which has a tendency to soften the tankcar market.

Probably a factor too in the irresolute wholesale gasoline market is the failure of Mid-Continent stocks to drop more sharply. Although the country's total stocks showed a little falling off in the week ending October 24, most of the decrease was in California. The Mid-Continent's inventories shrunk only about 15,000 bbls., and they are estimated to be more than 20 per cent larger than they were at this time last year. Informed observers say they should be only 10 per cent larger to meet the demands of a balanced market.

Improvement in the retail gasoline trade was recorded in the past week when the more important dealers in certain highly competitive districts took down their 13-cent signs from the third-grade pumps and put up 15-cent ones. The lower price had been in effect throughout the season of heavy consumption. The Tulsa and Muskogee districts had been the particularly weak spots. It was said that only a few filling-station operators, regarded as incurables, were still offering the cut price.

Estimates indicated that October consumption of motor fuel did not fall much below that of September. Although tourist business tapered off, sales for commercial use showed little diminution.

With a smashing demand for furnace oils throughout the coming winter a practical certainty, refiners are planning their operations with this prospect in mind. Those who have light distillates are restricting their shipments pretty closely to orders on contracts, confident that if any are left over they will bring higher prices than those prevailing now. Kerosene was participating in the lively market for heating oils.

Natural gasoline, though firm at current quotations, was somewhat less energetic. Supply and demand were about in balance in Oklahoma. In Texas the market was still designated as tight.

### *PRICE-CUTTING IN NEUTRALS*

Notwithstanding the recent action of Mid-Continent refiners in slashing prices on neutrals, underselling was reported to have broken out again in the past week. Sales of 200-, 250- and 280-viscosity material were said to have been made at 1 to 2 cents under established prices. Although the volume moved at these lower figures was understood to be too small to make the prices representative, it nevertheless had a weakening effect on a market already impaired by price-cutting. Why even small refiners have resorted to dumping under prevailing conditions is not clear. The eastern market is strong, and in the Mid-Continent itself refinery stocks are estimated to represent less than 50 days' supply. Bright stocks exhibited an increasing tendency to softness.

## Refined Oil Market Barometer

Favorable motoring weather and vigorous commercial demand are keeping gasoline consumption at a high level, but the tankcar market lacks steadiness. Scarcity of burning oils is becoming more pronounced, with refiners behind on shipments. Neutrals are seasonally stronger except in the Mid-Continent, where price-cutting has injured the market. Natural gasoline is losing some of its buoyancy.

MID-CONTINENT. Retail gasoline steady, but tankcar market uncertain.

EAST COAST. Tankcar gasoline firmer, but retail spotty. Neutrals strong.

GULF COAST. Gasoline weak. Burning oils up.

PENNSYLVANIA. Bright stocks, neutrals firm. Gasoline softening. Wax scarce.

CALIFORNIA. Gasoline weaker, prices unchanged. Marine strike causing uneasiness.

CHICAGO. Heating oils vigorous. Gasoline somewhat steadier.

# Gulf Export Market Is Strengthened; and Fuel Oil Market Improved

By H. STANLEY NORMAN

NEW YORK, Nov. 2.—The Gulf Coast export market strengthened last week, so far as previous moving prices, are concerned, and sellers look to further improvement in the fuel oil bracket.

A cargo of 64-66 375 endpoint gasoline sold for 5⅝ cents per gallon. It is consigned to a European destination, but the main feature of the sale was that specifications called for immediate lifting. The tanker to receive the load was alongside loading docks at the end of the week and was scheduled to sail immediately. The price at which the cargo sold was a full quarter cent above the last reported sale and gave indications the business done three weeks ago at 5⅜ cents per gallon was probably the market's low.

In the export business, the market is receptive to other business at the present quotations, but most people in position to supply stocks, particularly heating material, are unwilling to close at going figures. One other inquiry for a cargo of gasoline is hanging over the Gulf Coast export market. The buyers are trying to do business on a basis of 5½ cents per gallon, but several refiners normally in position to do business are not quoting on the inquiry due to inability to fill the cargo. Others are unwilling to compete for the business at the figures mentioned by purchasers. Some refiners are doubtful the buyers can close for the cargo at 5½ cents per gallon. The purchasers have permitted the impression to go abroad that they can buy at 5½ cents but several believe the figure is more in line with the buyers' hopes than with the true market.

Requirement that the gasoline cargo sold last week be lifted immediately leaves little doubt that the supply situation on the Gulf Coast is tight. The refiner selling the cargo reported there was no quibbling over the price. The chief requirement was immediate lifting.

Fuel oils, particularly the heavy industrial grades other than Bunker C, gave unmistakable evidence of heading into higher ground. There was little to justify a quotable increase, but supplies of No. 6 fuel available at 3⅛ cents per gallon have almost completely disappeared in the tankcar market. A majority of refiners are now asking 3½ cents to 3⅝ cents for the heavier fuels.

The lighter fuels, Nos. 3 and 4 grade, were fairly active, but with only moderately low temperatures prevailing, domestic burners are not consuming sufficient material to bring about concentrated business. Most of the dealers have their stocks in condition to meet heavy demand which will come with colder weather and constantly low temperatures. The full inventories in hands of dealers and jobbers probably will work against volume movement until they are somewhat reduced.

There were reports of scattered cut prices in the No. 2 fuel oil market but the volume involved and the small number of dealers selling below the quoted figures did not justify a broad scale reduction. Most tankcar dealers consider the weakness only temporary and gave indication it would be passed without action into lower ground.

Near termination of the Erie Canal shipping traffic for the winter has caused a shortage of barges for river traffic in the northeastern seaboard district. Rush of heavy building supplies, ores and other material to or from the Great Lakes region through the Erie Canal has most of the river barge facilities fully engaged. Gasoline dealers declare they are passing up considerable upstate New York business because of the inability to secure barge facilities. Irrespective of this, however, tankcar and retail gasoline prices in the New York harbor district are comparatively firm and the volume is at least satisfactory for this season.

The retail structure weakened slightly in Brooklyn at the end of last week when several stations started selling 7 gallons for $1, but in other parts of the metropolitan area, the normal of 6 gallons for 98 cents, including 4 cents per gallon tax, prevailed. Most dealers said the Brooklyn sag probably would be rectified within a few days and were not particularly alarmed about a broad-scale reduction.

The retail market in Pennsylvania and New Jersey seemed firmly fixed at a cent per gallon above the lows touched earlier in the month of October. The Philadelphia and Newark prices are within a half cent of markets prevailing for several months up until the 1½-cent reduction early in October.

Bunker C fuel oil in New York is moving at satisfactory rate with prices of $1.15 per barrel unchanged. Diesel engine fuel at $1.65 per barrel is also moving in moderate volume and supplies are comfortably within reasonable consumption expectation.

The Bunker C fuel situation on the Gulf Coast is also reported strong with very little material available even at 95 cents per barrel. With tanker and loading charges totaling 32 cents from the Gulf Coast, the Bunker C material originating in Texas or Louisiana waters costs $1.27 per barrel at New York harbor discouraging open market trading on that material. Resistance of Bunker C fuel to the tanker chartering rate from the Gulf Coast probably is the best indication of the strong position the material now occupies.

The strong position of neutral oils in the Pennsylvania district became more pronounced as blenders started inquiring for material to produce their winter lubricants. Demand exceeding normal expectations for neutrals during the summer averted accumulation of stocks for the winter trade. Several Pennsylvania district refiners were reported sold up for November neutral production and some have enough business booked to keep them out of the open market through December.

The export call for bright stocks continues to more than offset the normal seasonal demand decline and talk is heard of increased prices in the near future if the trend is sustained. The export business in bright stocks exceeded expectations throughout the summer and is carrying well into the early winter months. There is no apparent slump in the export buying which is still supported by the interrefinery purchases. Another important factor in the bright stock firm market position is that refiners are running more to lower pourpoint material and lighter color thus reducing the volume produced. In the neutral bracket a minimum of 22 cents is quoted for 200 viscosity, 25 pour test material.

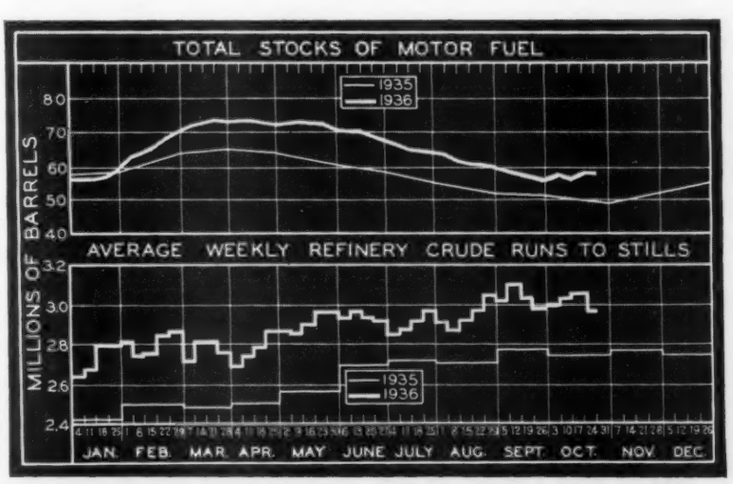
The wax market has shown virtually no change, although scattered reports of tankcar sales of white scale at 2.40 cents per pound were heard. Others maintained their quotations firm at 2.45 cents for the same material and said volume of movement was fair.

Motoring conditions were ideal last week end in the New York district, the first time in more than a month, and retail outlets were doing volume business. Scattered fall sport attractions are keeping the week end automobile travel at a high level.

The quoted market for 65 octane gasoline remains 6¾ cents per gallon, but considerable business is being done at 6½ cents with only scattered instances of shading below the lower figure.

## *A. P. I. Weekly Refinery Statistics*

Refinery figures for week ending October 31 not available due to National Election.



# RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of November 3, 1936

## Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

## Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank-wagon or 2 cents a gallon off retail prices is permitted for purchases between 4,000 and 10,000 gallons per month or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

## Standard Oil Co. (Indiana)

| | Gasoline Tank wag. | Gasoline Dir. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Chicago, Ill. | 15.4 | 13.4 | 4.0 | 9.2 |
| Decatur | 15.4 | 13.9 | 4.0 | 9.2 |
| Joliet | 14.5 | 13.9 | 4.0 | 9.2 |
| Peoria | 15.4 | 13.9 | 4.0 | 9.2 |
| Quincy | 15.2 | 13.7 | 4.0 | 9.0 |
| Davenport, Ia. | 15.4 | 13.9 | 4.0 | 9.2 |
| Des Moines | 15.2 | 13.7 | 4.0 | 9.0 |
| Mason City | 15.6 | 14.1 | 4.0 | 9.4 |
| Sioux City | 15.4 | 13.9 | 4.0 | 9.2 |
| Duluth, Minn. | 16.2 | 14.7 | 4.0 | 10.0 |
| Mankato | 15.8 | 14.3 | 4.0 | 9.6 |
| Twin Cities | 15.8 | 14.3 | 4.0 | 9.6 |
| La Crosse, Wis. | 16.8 | 15.3 | 5.0 | 9.6 |
| Green Bay | 17.1 | 15.6 | 5.0 | 9.9 |
| Milwaukee | 16.7 | 15.2 | 5.0 | 9.5 |
| Detroit, Mich. | 15.0 | 13.5 | 4.0 | 8.8 |
| Grand Rapids | 15.4 | 13.9 | 4.0 | 9.3 |
| Saginaw | 15.6 | 14.1 | 4.0 | 10.1 |
| Evansville, Ind. | 17.1 | 15.6 | 5.0 | †9.7 |
| Indianapolis | 17.3 | 15.8 | 5.0 | †9.0 |
| South Bend | 17.5 | 16.0 | 5.0 | †9.0 |
| Fargo, N. Dak. | 16.8 | 15.3 | 4.0 | 10.6 |
| Minot | 18.0 | 16.5 | 4.0 | 11.8 |
| Huron, S. Dak. | 17.3 | 15.8 | 5.0 | 10.1 |
| Kans. City, Mo.* | 14.8 | 13.3 | 4.0 | 8.0 |
| St. Louis* | 15.1 | 13.6 | 4.0 | 8.9 |
| St. Joseph* | 14.8 | 13.3 | 4.0 | 8.6 |
| Wichita, Kans. | 14.3 | 11.5 | 4.0 | 8.0 |

*State tax 2 cents. 1-cent city tax and 1-cent federal tax. †Does not includes 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month, off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

## Stanolex Fuel Oil in Chicago

Effective October 5, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.75 cents; 100-119 gallons, 7.75 cents; 150 gallons and over, 7.25 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.75 cents; 150 gallons and over, 6.75 cents. Stanolex furnace oil, 1-149 gallons, 7.75 cents; 150 gallons and over, 6.75 cents. Stanolex A, 1-399 gallons, 6 cents; 400 gallons and over, 5 cents. Stanolex B, 1-799 gallons, 5.5 cents; 800 gallons and over, 4.5 cents.

## Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Atl'tic City, N.J. | 13.0 | .... | 4.0 | 9.0 |
| Newark | 12.5 | .... | 4.0 | 7.5 |
| Annapolis, Md. | 14.6 | .... | 5.0 | 10.0 |
| Baltimore | 14.0 | .... | 5.0 | 8.0 |
| Cumberland | 16.6 | .... | 5.0 | 10.0 |
| Wash'g'n, D.C. | 12.0 | 15.5 | 3.0 | 9.0 |
| Danville, Va. | 17.2 | 20.7 | 6.0 | 12.9 |
| Norfolk | 16.0 | 19.5 | 6.0 | 11.2 |
| Petersburg | 16.3 | 19.8 | 6.0 | 11.7 |
| Richmond | 16.3 | 19.8 | 6.0 | 11.7 |
| Roanoke | 17.5 | 21.0 | 6.0 | 12.9 |
| Charles'n, W. Vt. | 15.8 | .... | 5.0 | 12.6 |
| Parkersburg | 15.1 | .... | 5.0 | 11.2 |
| Wheeling | 15.0 | .... | 5.0 | 12.2 |
| Charlotte, N. C. | 18.4 | .... | 7.0 | 12.6 |
| Hickory | 18.9 | .... | 7.0 | 13.0 |
| Mt. Airy | 18.7 | .... | 7.0 | 12.8 |
| Raleigh | 18.0 | .... | 7.0 | 12.1 |
| Salisbury | 18.5 | .... | 7.0 | 12.7 |
| Charleston, S. C. | 17.0 | 20.5 | 7.0 | 11.1 |
| Columbia | 18.0 | 21.5 | 7.0 | 12.1 |
| Spartanburg | 18.7 | 22.2 | 7.0 | 12.9 |

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount (if necessary) is given.

## Southern District

STANDARD OIL CO. OF KENTUCKY

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Atlanta, Ga. | 20.5 | 22.5 | 7.0 | *13.0 |
| Augusta | 19.5 | 21.0 | 7.0 | *12.5 |
| Macon | 20.0 | 22.0 | 7.0 | *14.0 |
| Savannah | 18.5 | 20.5 | 7.0 | *12.5 |
| Birm'ham, Ala. | 21.0 | 23.0 | 8.0 | 12.0 |
| Mobile | 20.0 | 21.0 | 9.0 | 11.0 |
| Montgomery | 20.5 | 21.0 | 9.0 | 14.0 |
| Jackson, Miss. | 20.0 | 22.0 | 7.0 | *12.5 |
| Vicksburg | 19.5 | .... | 7.0 | 12.5 |
| Jacksonville, Fla. | 18.0 | 20.0 | 8.0 | 11.5 |
| Miami | 19.5 | 21.5 | 8.0 | 12.5 |
| Pensacola | 21.5 | 23.5 | 9.0 | 10.5 |
| Tampa | 18.5 | 20.5 | 8.0 | 11.5 |
| Lexington, Ky. | 18.0 | 20.0 | 6.0 | 11.0 |
| Covington | 17.5 | 19.5 | 6.0 | 10.5 |
| Louisville | 18.0 | 20.0 | 6.0 | 10.0 |
| Paducah | 16.5 | .... | 6.0 | 8.0 |

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon. Pensacola, Fla., has a city gasoline tax of 1 cent.

## Rocky Mountain District

CONTINENTAL OIL CO.

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag |
|---|---|---|---|---|
| Denver, Colo. | 19.0 | 21.0 | 5.0 | 11.0 |
| Grand Junction | 21.5 | 23.5 | 5.0 | 15.0 |
| Pueblo | 19.0 | 21.0 | 5.0 | 10.0 |
| Casper, Wyo. | 19.5 | 21.5 | 5.0 | 11.5 |
| Cheyenne | 19.5 | 21.5 | 5.0 | 13.0 |
| Butte, Mont. | 21.0 | 23.0 | 6.0 | 14.5 |
| Billings | 22.5 | 24.5 | 6.0 | 14.5 |
| Helena | 22.5 | 24.5 | 6.0 | 14.5 |
| Great Falls | 22.5 | 24.5 | 6.0 | 14.5 |
| Salt Lake, Utah | 21.0 | 23.0 | 5.0 | 16.0 |
| Twin Falls, Ida. | 23.0 | 25.0 | 6.0 | 15.0 |
| Boise | 22.5 | 24.5 | 6.0 | 18.0 |
| Albu'que, N. M. | 19.0 | 21.0 | *6.5 | 13.0 |

*Includes one-half cent city tax.

Discount to dealers with or without contract in Continental territory: Undivided dealer discount off service station price 4 cents except in Montana where a discount of 2 cents off tank-wagon price only is allowed; divided dealer accounts, 3½ cents.

## Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| San Francisco | 17.0 | 18.0 | 4.0 | 11.5 |
| Los Angeles | 16.5 | 17.5 | 4.0 | 9.0 |
| Fresno, Calif. | 17.5 | 18.5 | 4.0 | 11.0 |
| Phoenix, Ariz. | 20.5 | 21.5 | 6.0 | †16.0 |
| Reno, Nev. | 19.5 | 20.5 | 5.0 | 13.0 |
| Portland, Ore. | 19.5 | 20.5 | 6.0 | 13.5 |
| Seattle, Wash. | 19.5 | 20.5 | 6.0 | 13.5 |
| Tacoma | 19.5 | 20.5 | 6.0 | 13.5 |
| Spokane | 22.5 | 23.5 | 6.0 | 16.5 |

Discounts to dealers: on gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 2 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

‡Includes 5-cent state tax.

## New York and New England

SOCONY-VACUUM OIL CO., INC.

| | Gasoline Post. deal. | Gasoline Serv. sta. | Gasoline Inc tax | Kero tank wag |
|---|---|---|---|---|
| Albany, N. Y. | 12.7 | .... | 4.0 | 7.75 |
| *Met. N. Y.: | | | | |
| Manhtn., Bronx | 12.7 | .... | 4.0 | 7.25 |
| Staten Island | 13.0 | .... | 4.0 | 7.25 |
| Qu'ns & Br'klyn | 12.7 | .... | 4.0 | 7.25 |
| Buffalo | 13.5 | .... | 4.0 | 8.25 |
| Rochester | 13.5 | .... | 4.0 | 8.25 |
| Syracuse | 13.5 | .... | 4.0 | 8.75 |
| Boston, Mass. | 12.5 | .... | 4.0 | 7.50 |
| Portland, Me. | 14.5 | .... | 5.0 | 7.75 |
| Manch'ter, N. H. | 15.0 | .... | 5.0 | 8.00 |
| Burlington, Vt. | 14.7 | .... | 5.0 | 8.75 |

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

## Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Philadelphia, Pa. | 16.0 | 16.0 | 5.0 | 9.5 |
| Pittsburgh | 17.5 | 19.5 | 5.0 | 9.0 |
| Allentown | 16.75 | .... | 5.0 | 9.5 |
| Erie | 17.5 | 18.5 | 5.0 | 8.0 |
| Scranton | 16.75 | .... | 5.0 | 10.0 |
| Altoona | 17.5 | 19.5 | 5.0 | 9.5 |
| Dover, Del. | 17.0 | .... | 5.0 | 10.0 |
| Wilmington | 16.0 | .... | 5.0 | 9.0 |
| Springf'd, Mass. | 12.5 | .... | 4.0 | 7.5 |
| Worcester | 13.0 | .... | 4.0 | 7.75 |
| Hartford, Conn. | 12.4 | .... | 4.0 | 7.0 |
| New Haven | 12.3 | .... | 4.0 | 7.5 |
| Providence, R. I. | 11.0 | .... | 3.0 | 7.0 |

Note—Tank-wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

## Naphtha

STANDARD OIL CO. (INDIANA)

| | Tank-wagon* |
|---|---|
| Oleum spirits | 15.7 |
| V.M.&P. naphtha | 16.0 |
| Cleaners' naphtha | 15.0 |
| Stanisol | 15.0 |

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 15t gallon lots if covered by contract.

## Central South District

STANDARD OIL CO. OF LOUISIANA

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| N. Orleans, La. | 19.5 | 23.0 | *10.0 | †13.0 |
| Baton Rouge | 17.5 | 21.0 | 8.0 | 11.5 |
| Alexandria | 18.0 | .... | 8.0 | 11.0 |
| Lafayette | 18.5 | .... | 8.0 | 12.5 |
| Lake Charles | 18.5 | .... | 8.0 | 10.0 |
| Shreveport | 17.0 | .... | 8.0 | 10.0 |
| Knoxville, Tenn. | 20.5 | 24.0 | 8.0 | 14.0 |
| Memphis | 18.5 | 22.0 | 8.0 | 9.5 |
| Chattanooga | 20.0 | .... | 8.0 | 11.5 |
| Nashville | 19.5 | .... | 8.0 | 10.0 |
| Bristol | 19.25 | .... | 8.0 | 14.5 |

*Includes 2-cent parish tax. †Includes 1 cent parish tax and 1 cent state tax.

Tank-wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

## Southwestern District

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Dallas, Tex. | 15.0 | 17.0 | 5.0 | 7.5 |
| Fort Worth | 15.0 | 17.0 | 5.0 | 8.5 |
| Houston | 16.0 | 18.0 | 5.0 | 8.5 |
| San Antonio | 16.0 | 18.0 | 5.0 | 7.5 |
| El Paso | 16.0 | 18.0 | 5.0 | 8.0 |
| Muskogee, Ok. | 16.0 | 18.0 | 5.0 | 8.0 |
| Okla. City | 16.0 | 18.0 | 5.0 | 8.0 |
| Tulsa | 16.0 | 18.0 | 5.0 | 8.0 |
| Ft. Smith, Ark. | 16.5 | 18.5 | 5.0 | 8.0 |
| Little Rock | 19.0 | 21.0 | 7.5 | 9.5 |
| Texarkana | 16.5 | 18.5 | 5.0 | 8.5 |

## Ohio

STANDARD OIL CO. OF OHIO

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero tank wag |
|---|---|---|---|---|
| Ohio points | 17.5 | (†) | 5.0 | *13.5 |

*Includes state tax of 1 cent

†Following the leasing of service stations to dealers at many points the company no longer posts a statewide service-station price.

## Nebraska

STANDARD OIL CO. OF NEBRASKA

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Omaha | 17.8 | 19.8 | 6.0 | 9.5 |
| McCook | 18.5 | 20.5 | 6.0 | 10.2 |
| Norfolk | 18.2 | 20.2 | 6.0 | 9.9 |
| North Platte | 18.6 | 20.9 | 6.0 | 10.3 |
| Scotts Bluff | 19.3 | 21.3 | 6.0 | 11.0 |

Note—Discounts to dealers: where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank-wagon deliveries covered only by standard commercial consumers contract effective January 1, 1935.

## Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

| | Gasoline Tank wag. | Gasoline Serv. sta. | Gasoline Inc. tax | Kero. tank-wag. |
|---|---|---|---|---|
| Hamilton, Ont. | 21.0 | 23.5 | 6.0 | 17.0 |
| Toronto, Ont. | 21.0 | 23.5 | 6.0 | 17.0 |
| Brandon, Man. | 29.8 | 32.8 | 7.0 | 22.8 |
| Winnipeg, Man. | 28.2 | 31.2 | 7.0 | 20.7 |
| Regina, Sask. | 29.5 | 32.5 | 7.0 | 22.0 |
| Saskatoon, Sask. | 32.3 | 35.3 | 7.0 | 24.8 |
| Edmonton, Alta. | 30.5 | 33.5 | 7.0 | 24.2 |
| Calgary, Alta. | 28.0 | 31.0 | 7.0 | 21.5 |
| Vancouver, B. C. | 22.0 | 26.0 | 7.0 | 23.0 |
| Montreal, Que. | 18.5 | .... | 6.0 | 17.5 |
| St. John, N. B. | 24.0 | 28.0 | 8.0 | 18.5 |
| Halifax, N. S. | 24.0 | 28.0 | 8.0 | 18.5 |

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal where discounts below station price are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

## Retail Price Changes

Standard Oil Co. of Kentucky October 8 advanced tank-wagon and station gasoline .5 cent in Tampa; October 15 reduced tank-wagon gasoline .25 cent in Paducah; October 20 reduced tank-wagon kerosene 1 cent in Augusta, and October 22 reduced tank-wagon kerosene 1.5 cents in Pensacola.

Standard Oil Co. of Louisiana discontinued posting service-station prices of gasoline at Nashville following the converting of stations to a dealer basis.

## Crude Oil Price Changes

Humble Oil & Refining Co. posted new prices effective November 1 in some Gulf Coast and Southwest Texas fields as follows: Saxet field and Mirando, 5-cent advance to 95 cents; Flour Bluff given the same price schedule as Anahuac and Dickinson: 30 gravity $1.04, with 2 cents added for each degree upward to 40 degrees and over at $1.24; Refugio heavy, 5-cent advance to 95 cents; Heyser, light, $1.15; Heyser, heavy, 90 cents; Placedo, heavy, 90 cents; Plymouth added to regular Gulf Coast posted price table, starting at below 20 gravity 92 cents, 20 gravity 94 cents, with 2 cents added for each degree upward to 40 degrees and above at $1.22; Taft, 95 cents. Heyser, Placedo, Flour Bluff, Taft and Plymouth were new postings for the Humble company.

Ohio Oil Co. posted $1.08½ for Rock Creek, Wyoming, crude effective November 1, a reduction of 3½ cents.

## New Corpus Christi Dock

CORPUS CHRISTI, Tex., Nov. 2.—Closely coinciding with the tenth anniversary of the port of Corpus Christi, a third oil dock was recently placed in use at the Avery Point Turning Basin. The first cargo loaded was crude from the terminal of Southern Pipe Line Co. The Rhea, French tanker, was the first large tanker to enter the newly deepened channel connecting the turning basin with the Avery Point Basin. From 75,000 to 80,000 bbls. of Saxet light crude were lifted for delivery at Havre, France.

Col. E. O. Thompson and Col. I. M. Adams, port director, were present at the opening of the dock.

# PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of November 3, 1936

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

## Refinery Gasoline

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below (3d gr.) | .04⅝ | .04¾ |
| 63-67 octane | .05 | .05¼ |
| 68-70 octane (regular) | .05⅝ | .05⅝ |
| 60-62 400 grades: | | |
| 62 octane and below (3d gr.) | .04⅝ | .04¾ |
| 63-67 octane | .05 | .05¼ |
| 68-70 octane (regular) | .05⅝ | .05⅝ |
| 64-66 375 | .04¾ | .05 |
| 68-70 360 | .05 | .05⅛ |

NORTH TEXAS—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .04⅝ | .04¾ |
| 63-67 octane | .05 | .05¼ |
| 68-70 octane (regular) | .05⅝ | .05⅝ |
| 60-62 400 | .04⅝ | .04¾ |
| 64-66 375 | .04⅞ | .05 |

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .05⅛ | .05⅝ |
| 63-67 octane | .06¼ | .06⅜ |
| 68-70 octane (regular) | .06⅛ | .06⅝ |

ARKANSAS (Ark., N. La., Miss. del.)—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .05½ | .05⅝ |
| 63-67 octane | .06¼ | .06⅜ |
| 68-70 octane (regular) | .06½ | .06⅝ |

CHICAGO (Based on Group 3)—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 62 octane and below | .04⅝ | .04¾ |
| 63-67 octane | .05 | .05¼ |
| 68-70 octane (regular) | .05⅝ | .05¾ |
| 60-62 400 grades: | | |
| 62 octane and below | .04⅝ | .04¾ |
| 63-67 octane | .05 | .05¼ |
| 68-70 octane (regular) | .05⅝ | .05⅝ |
| 64-66 375 | .04¾ | .05 |
| 68-70 360 | .05 | .05⅛ |

PENNSYLVANIA (inland refineries)

| | | |
|---|---|---|
| 58-60 U. S. Motor: | | |
| Below 60 octane | | .06¾ |
| 60-64.9 octane | | .07 |
| 65-70 octane | | .07¼ |
| 64-66 375 | | .06⅛ |
| 68-70 350 | | .06⅜ |

CALIFORNIA (domestic movement)—

| | | |
|---|---|---|
| 54-58 U. S. Motor | .07 | .08 |
| 58-60 400 | .07⅝ | .08½ |

EAST COAST (domestic)—

| | | |
|---|---|---|
| U. S. Motor below 60 octane: | | |
| *New York (Bayonne) | | .06½ |
| Baltimore | | .06¼ |
| U. S. Motor, 60-64.9 octane: | | |
| *New York (Bayonne) | | .06½ |
| Philadelphia | .06½ | .06⅝ |
| Boston | | .06¾ |
| Baltimore | .06½ | .06⅝ |
| Charleston, S. C. | | .06⅝ |
| U. S. Motor, 65 and above: | | |
| *New York (Bayonne) | | .06⅝ |
| Philadelphia | .06¾ | .07 |
| Boston | | .07 |
| Baltimore | .06¾ | .07 |
| Charleston, S. C. | | .07 |

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| Below 60 octane | .05½ | .05⅝ |
| 60-64.9 octane | .05¾ | .06 |
| 65 octane and higher | .06 | .06¼ |

## Naphtha

PENNSYLVANIA (inland refineries)

| | |
|---|---|
| 50-52 450 (blending) | .05½ |
| 52-54 450 (blending) | .05½ |
| 54-56 450 (blending) | .05⅝ |

## Natural Gasoline

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| Grade 26-70 | | .04½ |
| Grade 18-55 | .05¾ | .05½ |
| Low vapor pressure grade: | | |
| *14-pound v.p. (max.) | .05⅝ | .06 |
| *12-pound v.p. (max.) | .06¼ | .06½ |

*Nominal.

NORTH TEXAS—

| | |
|---|---|
| Grade 26-70 | .04¼ |
| Grade 18-55 | .05⅛ |

CALIFORNIA—

| | | |
|---|---|---|
| 75-85 375-390 | .07 | .07¾ |

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

| | | |
|---|---|---|
| Grade 26-70 | .04⅝ | .04¾ |

## Tractor Fuel

OKLAHOMA (Group 3)—

| | |
|---|---|
| 40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p. | .03½ |
| 41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p. | .03¾ |
| 46-48 gr., 210-230 i.b.p., 480 max. e.p. | .04½ |

## Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| 41-43 | .03⅜ | .03½ |
| 42-44 | .03½ | .03⅝ |

NORTH TEXAS—

| | | |
|---|---|---|
| 41-43 | .03⅜ | .03½ |

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

| | | |
|---|---|---|
| 41-43 | .03⅜ | .03⅞ |

ARKANSAS (Ark., N. La., Miss. del.)—

| | | |
|---|---|---|
| 41-43 | .04 | .04¼ |

PENNSYLVANIA (inland refineries)—

| | | |
|---|---|---|
| 45 | .04⅜ | .04⅞ |
| 46 | .04⅞ | .05 |
| 47 | .05 | .05⅛ |

CHICAGO (Based on Group 3)—

| | | |
|---|---|---|
| 41-43 | .03⅛ | .03¼ |
| 42-44 | .03⅜ | .03½ |

CALIFORNIA (Pac. Coast market)—

| | | |
|---|---|---|
| 38-40 high burning test | .03½ | .05 |

NEW YORK (Bayonne, N. J.)—

| | |
|---|---|
| 41-43 | .04⅜ |

GULF COAST (domestic)—

| | |
|---|---|
| 41-43 | .03⅞ |

*Barge price one-eighth cent lower.

## Furnace Oil

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| No. 1 prime white, 38-42 | .03⅜ | .03⅝ |
| No. 1 straw, 38-40 | .03¼ | .03⅜ |
| No. 2 straw, 32-36 | .03⅛ | .03¼ |
| No. 2 dark, 32-36 | .03 | .03⅛ |
| No. 3, 28-32 | .02⅞ | .03⅛ |
| No. 3, 15 and above, 28-32 | .02¾ | .02⅞ |

NORTH TEXAS—

| | | |
|---|---|---|
| No. 1 prime white, 38-42 | .03⅜ | .03½ |
| No. 1 straw, 38-40 | .03¼ | .03⅜ |

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

| | | |
|---|---|---|
| No. 2, 32-36 | .03⅛ | .03¼ |

ARKANSAS (Ark., N. La., Miss. del.)—

| | | |
|---|---|---|
| No. 2, 32-36 | | .03¼ |
| No. 3, 28-32 | | .03 |

CHICAGO (Based on Group 3)—

| | | |
|---|---|---|
| No. 1 prime white, 38-40 | .03⅜ | .03½ |
| No. 1 straw, 38-40 | .03¼ | .03⅜ |
| No 2 straw, 32-36 | .03⅛ | .03¼ |
| No 2 dark, 32-36 | .03 | .03⅛ |
| No. 3, zero to 15, 28-32 | | .02⅞ |
| No. 3, 15 and above, 28-32 | .02⅝ | .02¾ |

NEW YORK (Bayonne, N. J.)—

| | | |
|---|---|---|
| *No. 1 | .04½ | .04⅝ |
| *No. 2 | .04¼ | .04⅜ |
| *No. 4 | | .04 |

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

## Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| U.G.I. gas oil | .02⅝ | .02⅞ |
| No. 4, low cold test, 24-28 | .95 | 1.05 |
| No. 4, 15 and above, 24-28 | .80 | .85 |
| No. 5, low cold test, 18-22 | .72½ | .80 |
| Below 18 fuel oil, industrial | .70 | .75 |

NORTH TEXAS—

| | | |
|---|---|---|
| U.G.I. gas oil | .02½ | .02⅝ |
| No. 4, low cold test, 24-28 | .95 | 1.00 |
| No. 5, low cold test, 18-22 | .72½ | .80 |
| Below 18 fuel oil, industrial | .65 | .75 |

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

| | | |
|---|---|---|
| U.G.I. gas oil | .02⅝ | .02¾ |
| 10-14 fuel oil, industrial | .70 | .75 |

ARKANSAS (Ark., N. La., Miss. del.)—

| | | |
|---|---|---|
| 10-14 fuel oil, industrial | .60 | .65 |

CHICAGO (Based on Group 3)—

| | | |
|---|---|---|
| U.G.I. gas oil | .02½ | .02⅝ |
| No. 4, low cold test, 24-28 | .95 | 1.00 |
| No. 4, 15 and above, 24-28 | .80 | .82½ |
| No. 5, low cold test, 18-22 | .72½ | .75 |
| No. 6, low cold test, 10-16 | .65 | .67½ |

PENNSYLVANIA (inland refineries)—

| | | |
|---|---|---|
| 36-40 | .04⅜ | .04½ |

CALIFORNIA—

| | | |
|---|---|---|
| Los Angeles: | | |
| 30-34 gas oil, per bbl. | .95 | 1.15 |
| 24 plus diesel | 1.00 | 1.25 |
| 24 plus diesel (bunkers) | 1.05 | 1.30 |
| 12-16 (bunkers at tidewater) | .85 | .95 |
| 10-16 (cargo lots) | .75 | .95 |
| 12-17 (tankcars) | .70 | .95 |
| San Joaquin Valley: | | |
| 10-18 (tankcars) | .70 | .75 |
| San Francisco: | | |
| 27 plus diesel | | 1.35 |
| 24 plus diesel (bunkers) | | 1.35 |
| 10-16 (bunkers) | | 1.00 |

GULF COAST—

| | | |
|---|---|---|
| 28-30 gas oil | .03¼ | .03⅜ |
| 28-30 diesel (bunkers) | | 1.50 |
| Bunkers (bulk cargoes) | | .95 |
| Bunker C (bunkers) | | .95 |

NEW YORK (Bayonne, N. J.)—

| | | |
|---|---|---|
| 27 plus, gas oil | | .04½ |
| 28-30 diesel (lighterage 6¼ per bbl.) | | 1.65 |
| 28-30 diesel (tankcars) | .04¼ | .04½ |
| *Bunker C (to ocean-going ships in N. Y. harbor) | | 1.15 |
| Industrial fuel (tankcars) | | .03¾ |

*Lighterage charge 5c bbl. additional.

## Bright and Steam-Refined

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| Bright Stocks: | | |
| 190-200 D, 15-25 | | .20 |
| 150-160 D, 0-10 | | .17 |
| 150-160 D, 15-25 | | .16½ |
| 150-160 E, 15-25 | | .16 |
| 100-110 D, 0-10 | | .15½ |
| Steam refined: | | |
| 631 green (treated) | | .13 |
| 600 dark green (untreated) | | .05 |

PENNSYLVANIA—

| | | |
|---|---|---|
| Bright Stocks (Pennsylvania grade No. 8 color, 145-50 at 510; 540-550 flash): | | |
| 10 pour test | .24 | .24½ |
| 15 pour test | .23 | .23½ |
| 20 pour test | .22 | .22½ |
| 25 pour test | .21 | .21½ |
| Steam refined: | | |
| 600 | .13 | .13½ |
| 650 | .14 | .14½ |
| 600 Pennsylvania flash | .15 | .15½ |
| 630 flash | .17 | .17½ |
| 600 Warren E filtered | .16 | .16½ |

## Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| Zero to 10 Cold Test: | | |
| 150-3 | | .08½ |
| 180-3 | | .09½ |
| 180-4 | | .09 |
| 200-3 | | .10 |
| 200-4 | | .09½ |
| 250-3 | | .11 |
| 250-4 | | .10½ |
| 280-3 | | .12 |
| 280-4 | | .11½ |
| 300-3½ | | .12½ |
| 400-3½ | | .13½ |
| 100-2½ paraffin oil | | .05¾ |
| 15-20 Cold Test: | | |
| 200-3 | | .09½ |
| 200-4 | | .09 |
| 250-3 | | .10½ |
| 250-4 | | .10 |
| 280-3 | | .11½ |
| 280-4 | | .11 |

GULF COAST—

| | | |
|---|---|---|
| Pale Oils: | | |
| 200-3 | .06½ | .07 |
| 300-3 | .07 | .07½ |
| 500-3½ | .08 | .08½ |
| 750-3½ | .08½ | .09 |
| 1,200-3½ | .09 | .09½ |
| 2,000-4 | .09¼ | .09½ |
| Red Oils: | | |
| 200-5-6 | .06½ | .06⅝ |
| 300-5-6 | .06¾ | .07 |
| 500-5-6 | .07½ | .08 |
| 750 | .08 | .08½ |
| 1,200-5-6 | .08½ | .09 |

CALIFORNIA (moving to dom. market)

| | | |
|---|---|---|
| Pale Oils: | | |
| 100-2½-3 | | .06 |
| 200-2½-3 | | .06½ |
| 300-3-3½ | | .06½ |
| 400-3-4 | .08½ | .09¼ |
| 450-3-4 | .09¾ | .10 |
| 550-3-4 | .10 | .10¼ |
| 600-3-4 | .10¼ | .10½ |
| Red Oils: | | |
| 200-4-5 | | .06 |
| 300-5-6 | | .06¼ |
| 350-5-6 | .07 | .08 |
| 400-5-6 | .08 | .08¼ |
| 450-5-6 | .08¼ | .08½ |
| 500-5-6 | .08½ | .09 |
| 600-5-6½ | .09 | .09½ |
| 700-6½ plus | .09¾ | .10 |
| 750-6½ plus | .10 | .10¼ |
| 900-6½ plus | .10¼ | .10½ |

PENNSYLVANIA—

| | | |
|---|---|---|
| 150 vis. at 750° F. color, 400-405 flash: | | |
| Zero pour test | .21 | .21½ |
| 10 pour test | .20 | .20½ |
| 15 pour test | .19½ | .20 |
| 25 pour test | .18½ | .19 |
| 180 vis. at 70° F., 3 color: | | |
| 25 pour test | .21 | .21½ |
| 200 vis. at 70° F., 3 color: | | |
| Zero pour test | .24½ | .25 |
| 10 pour test | .23½ | .24 |
| 15 pour test | .23 | .23½ |
| 25 pour test | .22 | .22½ |

## Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

| | | |
|---|---|---|
| 124-126 (a.m.p.) w.c. scale | .02½ | .02⅝ |

PENNSYLVANIA (inland refineries)—

| | | |
|---|---|---|
| 122-124 (a.m.p.) w.c. scale | .0245 | .0250 |
| 124-126 (a.m.p.) w.c. scale | .0250 | .0255 |

NEW YORK—

| | | |
|---|---|---|
| Wax in bags fully refined: | | |
| 122-125 (a.m.p.) wax | | .0445 |
| 125-127 (a.m.p.) wax | | .0455 |
| 128-130 (a.m.p.) wax | | .0480 |
| 130-132 (am..p.) wax | | .0505 |
| 133-135 (a.m.p.) wax | | .0535 |
| 135-137 (a.m.p.) wax | | .0560 |
| 124-126 (a.m.p.) w.s. | .0240 | .0250 |
| 124-126 (a.m.p.) y.s. | .0240 | .0245 |
| Petrolatum in barrels, carload lots: | | |
| Dark green | | .01⅞ |
| Amber | .02⅞ | .03 |
| Extra amber | .03 | .03⅛ |
| Lily white | .06⅝ | .06¾ |
| Snow white | .07¾ | .07⅞ |
| Cream | .05⅝ | .05¾ |

## Export Prices

### GASOLINE

GULF COAST—

| | | |
|---|---|---|
| U. S. Motor | | .05¼ |
| 60-62 400 | | .05⅜ |
| 61-63 390 | .05⅜ | .05½ |
| 64-66 375 | | .05⅝ |

LOS ANGELES—

| | | |
|---|---|---|
| U. S. Motor grades: | | |
| 53-55 octane | | .04¾ |
| 55-65 octane | .04¾ | .05 |
| 65-67 octane | | .05 |
| 67-69 octane | | .05¼ |
| Above 69 octane | .05½ | .06 |

### KEROSENE

GULF COAST—

| | | |
|---|---|---|
| 41-43 prime white | | .03⅝ |
| 41-43 water white | | .03¾ |
| 44 water white | | .04½ |

LOS ANGELES—

| | | |
|---|---|---|
| 41-43 water white | .04½ | .05 |

### LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

| | |
|---|---|
| Cylinder Stocks: | |
| 600 Warren E | .22 |
| 600 S.R. unfiltered | .20 |
| 650 S.R. unfiltered | .19¾ |
| 600 flash S.R. | .22 |
| 630 flash S.R. | .23½ |
| Bright Stocks: | |
| 8 color | .28 |
| 6½ plus color in dilution | .27 |

### NEUTRAL OIL

| | |
|---|---|
| 200-3 color | .27½ |
| 150-3 color | .24 |

### PARAFFIN WAX

NEW YORK (prices per pound)—

| | | |
|---|---|---|
| 123-125 a.m.p. | | .04125 |
| 125-127 a.m.p. | | .0425 |
| 128-130 a.m.p. | | .0450 |
| 133-135 a.m.p. | | .0525 |
| 135-137 a.m.p. | | .0550 |
| Crude scale: | | |
| 124-126 w.s. | .0260 | .0270 |
| 124-126 y.s. | .0245 | .0250 |

# CRUDE OIL PRICES

## Oklahoma, Kansas, North Central and East Central Texas

(January 9, 1936)

| | |
|---|---|
| East Texas* | $1.15 |
| Van, Tex.† | 1.02 |
| Talco (Nov. 1, 1936) | .65 |
| Altus and Tipton, Okla.‡ | 1.08 |
| Other fields (see gravity table). | |

*All companies. †Pure Oil Co. ‡Gulf Oil Corp. Talco by Humble Oil & Refining Co.

## West Texas

| | |
|---|---|
| Crane, Upton, Howard, Glasscock and Mitchell counties | $ .80 |
| Winkler County | .85 |
| Lea County, N. Mex. | .85 |
| Pecos County* | .85 |
| Pecos shallow† | .75 |

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Note—For Humble, Magnolia and Texas Co.'s West Texas and Lea County prices see gravity table. Above prices are those of other buyers.

## Rocky Mountain States

(Effective January 9, 1936)

| | |
|---|---|
| Iles, Colo., light* | $1.06 |
| Iles, Colo., heavy* | 1.00 |
| Greybull, Wyo.* | 1.28 |
| Torchlight, Wyo.* | 1.28 |
| Grass Creek, Wyo., light*† | 1.18 |
| Grass Creek, Wyo., heavy*† | .72 |
| Hamilton Dome, Wyo.* | .67 |
| Elk Basin, Wyo., light *† | 1.18 |
| Frannie, Wyo., heavy* | .72 |
| Frannie, Wyo., light (Feb. 24, 1936)* | .78 |
| Hogback, N. Mex.* | 1.21 |
| Pondera, Mont. (Jan. 26, 1936)* | 1.05 |
| Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis. | |
| Big Muddy, Wyo.† | 1.11 |
| Rock Creek, Wyo. (Nov. 1, 1936)† | 1.08½ |
| Artesia, N. Mex. (Jan. 9, 1936)‡ | .80 |
| Maljamar, N. Mex. (Jan. 9, 1936)‡ | .80 |
| Fort Collins and Wellington, Colo. (Jan. 9, 1936)‡ | See Note |
| Florence, Colo. | .98 |
| Lance Creek, Wyo. | .85 |
| Lost Soldier, Wyo. (Sept. 30, 1933) | .88 |
| Hudson, Wyo. (June 2, 1931) | .65 |
| Sunburst, Mont. (June 5, 1936) | 1.15 |
| Cat Creek, Mont. | 1.28 |
| Cut Bank, Mont. | 1.35 |

Note—Fort Collins and Wellington are not posted, price 5 cents under quotation of Salt Creek crude of like gravity (Fort Collins 36°; Wellington 33°). *Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

## Southwest Texas

(January 9, 1936)

| | |
|---|---|
| Saxet (Nov. 1, 1936) | .95 |
| Mirando (Nov. 1, 1936) | .90 |
| Pettus | 1.25 |
| Taft (Nov. 1, 1936) | .95 |
| Salt Flat* | .97 |
| Salt Flat‡ | .97 |
| Darst Creek* | .97 |
| Darst Creek† | .97 |
| Luling | .90 |
| Lytton Springs | 1.00 |
| Duval County | .85 |
| Flour Bluff (Nov. 1, 1936). See gravity table | |

*Humble Oil & Refining Co. †Magnolia Petroleum Co., Gulf Pipe Line Co. and Texas Co. ‡Shell Petroleum Corp. Saxet posted by Humble and Texas; Mirando by Humble and Magnolia; Pettus by Humble; Salt Flat by Humble; Luling and Lytton Springs by Magnolia; Duval by Texas Co.

## Gulf Coast

(January 9, 1936)

| | |
|---|---|
| Cleveland, Tex. | $1.10 |
| Hardin, Tex. | 1.03 |
| Greta, Tex. | .90 |
| Refugio, Tex., heavy (Nov. 1, 1936) | .95 |
| Tomball, Tex. | 1.30 |
| Lafitte, La. | 1.12 |
| Livingston, Tex. | 1.15 |
| Bosco, La. (Jan. 16, 1936) | 1.05 |
| Evangeline, La. | 1.07 |
| Heyser, light (Nov. 1, 1936) | 1.15 |
| Heyser, heavy (Nov. 1, 1936) | .90 |
| Placedo (Nov. 1, 1936) | .90 |
| Plymouth (Nov. 1, 1936) ...See gravity table for Gulf Coast pools | |
| Welsh, La. | .96 |

Cleveland and Hardin by Magnolia; Greta by Texas Co.; Refugio by Humble; Tomball by Humble and Magnolia; Lafitte by Texas Co.; Bosco by Pure; Evangeline and Welsh by Stanolind Oil & Gas Co.; Livingston by Shell Petroleum Corp.

## Middle Western States

OHIO OIL CO.

| | |
|---|---|
| Lima (Sept. 22, 1936) | $1.15 |
| Illinois (Jan. 9, 1936) | 1.23 |
| Princeton, Ind. (Jan. 9, 1936)* | 1.23 |
| Midland, Mich. (Sept. 16, 1936)* | 1.32 |
| Midland, Mich. (Sept. 28, 1936)† | 1.37 |
| West Branch, Mich. (Sept. 16, 1936) | 1.16 |
| Muskegon, Mich. | 1.00 |
| Eastern Kentucky: | |
| Big Sandy River (Jan. 9, 1936) | 1.30 |
| Kentucky River (Jan. 9, 1936) | 1.38 |
| Western Kentucky (Jan. 9, 1936) | 1.23 |

*Posted by Simrall Corp. and Pure Oil Co. and includes Greendale, Porter, Beaverton and Crystal crudes. West Branch, Mich., by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. †Old Dutch Refining Co.

## North Louisiana and Arkansas

| | |
|---|---|
| Smackover, all grades (Jan. 10, 1936)* | $.75 |
| Smackover, all grades (Jan. 9, 1936)† | .80 |
| Tullos and Urania (Jan. 10, 1936) | .97 |
| Nevada, Ark. (Jan. 10, 1936) | .65 |
| El Dorado East field (Jan. 16, 1936) | .75 |
| Converse, Holly, Pleasant Hill and Zwolle (Jan. 10, 1936)* | 1.10 |
| Lisbon, Ark. (Jan. 10, 1936)* | 1.10 |
| Elm Grove, La. (Jan. 10, 1936) | .80 |

*Standard Oil Co. of Louisiana, Gulf Refining Co., Louisiana Oil Refining Co., Texas Co. (effective January 14) and Magnolia Petroleum Co. (effective January 16), Urania by H. L. Hunt Co. and Louisiana Oil Refining Co. Nevada by Standard of Louisiana, El Dorado East field by Magnolia Petroleum Co. Phillips Petroleum Co. (effective January 17), posts 75 cents for all grades in Union and Ouachita counties, Arkansas.

## Eastern States

TIDE WATER PIPE LINE CO.
(Effective Jan. 13, 1936)

| | |
|---|---|
| Bradford, Pa. | $2.45 |
| Allegany, N. Y. | 2.45 |

SOUTH PENN OIL CO.
(Effective Jan. 13, 1936)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines (Bradford field) | 2.45 |
| Pennsylvania Grade Oil in Southwest Pennsylvania Lines | 2.17 |
| Pennsylvania Grade Oil in Eureka Pipe Line lines | 2.12 |
| Pennsylvania Grade Oil in Buckeye Pipe Line lines | 1.97 |
| Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936) | 1.32 |

PENNZOIL CO.
(Effective Jan. 13, 1936)

| | |
|---|---|
| Pennsylvania Grade Oil in National Transit Lines: | |
| Group A — Includes Cochran, Franklin, Hamilton and Doolittle districts. | 2.42 |
| Group B — Includes Tidioute district. | 2.41 |
| Group C — Includes Turkey and Tidioute districts. | 2.40 |
| Group D — Includes Bear Creek and Porkey districts. | 2.39 |
| Group E — Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts. | 2.36 |

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Jan. 13, 1936)

| | |
|---|---|
| Cabin Creek, W. Va. | $2.12 |
| Bradford Hollow, W. Va. | 2.12 |
| Kelly Creek, W. Va. | 2.12 |

## Canada

| | |
|---|---|
| Ontario (Sept. 9, 1933): | |
| Petrolia* | $2.10 |
| Oil Springs | 2.17 |
| Turner Valley (Feb. 3, 1936):† | |
| Clean naphtha | 2.70 |
| Discolored naphtha | 2.46 |
| Crude oil, 50 gravity | 2.32 |
| Crude oil, 45 to 49.9 | 2.12 |
| Crude oil, 40 to 44.9 | 1.55 |

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

## Mexico

| | |
|---|---|
| Panuco* | $.895 |

*F.o.b. ship, based on September transactions and exclusive of production and export taxes and bar dues.

Noble Ward, driller, of Kolo Seco, Trinidad, is visiting friends in Petrolia, Ontario.

# Crude Prices by Gravities

| Gravity— | Oklahoma, Kansas and Salt Creek, Wyo. | Central and North Texas | East Central Texas | North Louisiana, Arkansas | Gray County, Texas | Carson and Hutchinson Counties, Texas | Conroe, Texas | West Texas and Lea County, New Mexico | Gulf Coast, Texas and Louisiana | Flour Bluff, Anahuac and Dickinson, Texas | Iowa and Cameron Meadows, Texas |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Below 20 | .... | .... | .... | .... | .... | .... | .... | .... | $.92 | .... | $.82 |
| 20-20.9 | .... | .... | .... | .... | .... | .... | .... | .... | .94 | .... | .84 |
| 21-21.9 | .... | .... | .... | .... | .... | .... | .... | .... | .96 | .... | .86 |
| 22-22.9 | .... | .... | .... | .... | .... | .... | .... | .... | .98 | .... | .88 |
| 23-23.9 | .... | .... | .... | .... | .... | .... | .... | .... | 1.00 | .... | .90 |
| 24-24.9 | .... | .... | .... | .... | .... | .... | .... | .... | 1.02 | .... | .92 |
| Below 25 | $.86 | .... | .... | $.78 | .... | .... | .... | .... | .... | .... | .... |
| 25-25.9 | .88 | .... | .... | .80 | .... | .... | .... | .... | 1.04 | .... | .94 |
| 26-26.9 | .90 | .... | .... | .82 | .... | .... | .... | .... | 1.06 | .... | .96 |
| 27.27.9 | .92 | .... | .... | .84 | .... | .... | .... | .... | 1.08 | .... | .98 |
| 28-28.9 | .94 | .... | .... | .86 | .... | .... | .... | .... | 1.10 | .... | 1.00 |
| Below 29 | .94 | $.84 | $.91 | .... | .... | .... | .... | $.75 | .... | .... | .... |
| 29-29.9 | .96 | .86 | .93 | .88 | .... | .... | .... | .76 | 1.12 | .... | 1.02 |
| 30-30.9 | .98 | .88 | .95 | .90 | .... | .... | .... | .78 | 1.14 | $1.04 | 1.04 |
| 31-31.9 | 1.00 | .90 | .97 | .92 | .... | .... | .... | .80 | 1.16 | 1.06 | 1.06 |
| 32-32.9 | 1.02 | .92 | .99 | .94 | .... | .... | .... | .82 | 1.18 | 1.08 | 1.08 |
| 33-33.9 | 1.04 | .94 | 1.01 | .96 | .... | .... | .... | .84 | 1.20 | 1.10 | 1.10 |
| 34-34.9 | 1.06 | .96 | 1.03 | .98 | .... | .... | .... | .86 | 1.22 | 1.12 | 1.12 |
| Below 35 | .... | .... | .... | .... | $.86 | $.81 | .... | .... | .... | .... | .... |
| 35-35.9 | 1.08 | .98 | 1.05 | 1.00 | .88 | .83 | $1.24 | .88 | 1.22 | 1.14 | 1.12 |
| 36-36.9 | 1.10 | 1.00 | 1.07 | 1.02 | .90 | .85 | 1.26 | .90 | 1.22 | 1.16 | 1.12 |
| 37-37.9 | 1.12 | 1.02 | 1.09 | 1.04 | .92 | .87 | 1.28 | .90 | 1.22 | 1.18 | 1.12 |
| 38-38.9 | 1.14 | 1.04 | 1.11 | 1.06 | .94 | .89 | 1.30 | .90 | 1.22 | 1.20 | 1.12 |
| 39-39.9 | 1.16 | 1.06 | 1.13 | 1.08 | .96 | .91 | 1.32 | .90 | 1.22 | 1.22 | 1.12 |
| 40 and over | 1.18 | 1.08 | 1.15 | 1.10 | .98 | .93 | 1.34 | .90 | 1.22 | 1.24 | 1.12 |

Magnolia Petroleum Co. in the East Central Texas field pays 7 cents per barrel less than above posted prices in that field.

## STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

| Gravity— | Signal Hill (Long Beach) | Seal Beach | Alamitos Heights | Huntington Beach | Inglewood | Playa del Rey | Olinda-Brea Canyon | Athens-Rosecrans | Dominguez | Elwood Terrace | Torrance | Richfield | Whittier E. Coyote (La Habra) | Montebello | W. Coyote Hills | Santa Fe Springs | Mountain View | Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area | Lost Hills | Coalinga | Wheeler Ridge | Kettleman Hills | Santa Paula* | Orcutt* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14-14.9 | $.80 | $.79 | $.74 | $.78 | $.79 | $.80 | $.76 | .... | .... | .... | $.80 | $.76 | $.76 | $.77 | $.78 | .... | .... | $.70 | $.70 | $.70 | .... | .... | $.70 | .... |
| 15-15.9 | .80 | .79 | .74 | .78 | .79 | .80 | .76 | .... | .... | .... | .80 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .70 | .... |
| 16-16.9 | .80 | .79 | .74 | .78 | .79 | .80 | .76 | .... | .... | .... | .80 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .70 | $.70 |
| 17-17.9 | .80 | .79 | .74 | .78 | .81 | .80 | .76 | .... | .... | .... | .80 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .71 | .70 |
| 18-18.9 | .80 | .79 | .74 | .78 | .84 | .80 | .78 | .... | .... | .... | .82 | .76 | .76 | .77 | .78 | .... | .... | .70 | .70 | .70 | .... | .... | .73 | .72 |
| 19-19.9 | .82 | .79 | .74 | .82 | .87 | .84 | .81 | .... | .... | .... | .85 | .76 | .78 | .77 | .78 | .... | $.70 | .74 | .74 | .71 | $.70 | .... | .75 | .74 |
| 20-20.9 | .85 | .79 | .74 | .85 | .90 | .88 | .84 | .... | .... | .... | .88 | .78 | .92 | .77 | .80 | .... | .70 | .78 | .78 | .72 | .70 | .... | .77 | .77 |
| 21-21.9 | .88 | .79 | .74 | .89 | .93 | .92 | .88 | .... | .... | .... | .91 | .80 | .85 | .77 | .84 | $.78 | .73 | .82 | .82 | .74 | .70 | .... | .79 | .80 |
| 22-22.9 | .92 | .82 | .74 | .92 | .96 | .98 | .92 | .... | .... | .... | .93 | .84 | .89 | .79 | .88 | .78 | .77 | .87 | .86 | .78 | .72 | .... | .82 | .83 |
| 23-23.9 | .95 | .86 | .77 | .96 | .99 | 1.02 | .96 | $.84 | $.79 | .... | .96 | .88 | .93 | .82 | .92 | .78 | .80 | .92 | .90 | .82 | .76 | .... | .85 | .86 |
| 24-24.9 | .99 | .91 | .80 | 1.00 | 1.02 | 1.06 | .99 | .88 | .81 | .... | .99 | .91 | .96 | .85 | .96 | .82 | .84 | .97 | .94 | .86 | .79 | .... | .87 | .88 |
| 25-25.9 | 1.03 | .95 | .82 | 1.03 | 1.05 | 1.11 | 1.03 | .93 | .83 | .... | 1.02 | .95 | .... | .89 | .99 | .86 | .88 | 1.01 | .98 | .90 | .83 | .... | .90 | .91 |
| 26-26.9 | 1.06 | 1.00 | .85 | 1.07 | 1.09 | 1.16 | 1.06 | .98 | .86 | .... | 1.05 | .98 | .... | .92 | 1.03 | .90 | .91 | 1.06 | 1.02 | .... | .... | .... | .92 | .91 |
| 27-27.9 | 1.10 | 1.05 | .88 | 1.11 | 1.12 | .... | 1.10 | 1.03 | .88 | .... | .... | 1.02 | .... | .96 | 1.06 | .95 | .95 | 1.10 | 1.06 | .... | .... | .... | .95 | .... |
| 28-28.9 | 1.14 | 1.10 | .90 | 1.14 | 1.15 | .... | 1.14 | 1.07 | .90 | .... | .... | 1.06 | .... | .99 | 1.10 | .99 | .99 | 1.15 | 1.10 | .... | .... | .... | .97 | .... |
| 29-29.9 | 1.17 | 1.15 | .93 | 1.18 | 1.18 | F.O.B. | 1.17 | 1.12 | .93 | .... | .... | 1.09 | .... | 1.03 | 1.14 | 1.03 | 1.02 | 1.20 | 1.14 | .... | .... | .... | .99 | .... |
| 30-30.9 | 1.21 | 1.19 | .95 | 1.22 | 1.21 | our | 1.21 | 1.17 | .95 | F.O.B. | .... | .... | .... | 1.07 | 1.17 | 1.08 | 1.06 | 1.25 | 1.18 | .... | .... | .... | 1.01 | .... |
| 31-31.9 | .... | .... | .... | .... | 1.24 | Pipe | 1.24 | 1.22 | .97 | Ship | .... | .... | .... | 1.11 | 1.21 | 1.12 | 1.09 | 1.29 | .... | .... | .... | .... | .... | .... |
| 32-32.9 | .... | .... | .... | .... | 1.27 | Line | 1.27 | 1.27 | 1.00 | .... | .... | .... | .... | 1.14 | 1.25 | 1.16 | 1.13 | 1.34 | .... | .... | .... | .... | .... | .... |
| 33-33.9 | .... | .... | .... | .... | .... | .... | .... | 1.32 | .... | $1.28 | .... | .... | .... | 1.18 | 1.28 | 1.20 | 1.17 | 1.38 | .... | .... | .... | $1.19 | .... | .... |
| 34-34.9 | .... | .... | .... | .... | .... | .... | .... | 1.37 | .... | 1.32 | .... | .... | .... | 1.22 | 1.32 | 1.25 | 1.20 | .... | .... | .... | .... | 1.23 | .... | .... |
| 35-35.9 | .... | .... | .... | .... | .... | .... | .... | 1.42 | .... | 1.35 | .... | .... | .... | 1.25 | .... | 1.29 | .... | .... | .... | .... | .... | 1.27 | .... | .... |
| 36-36.9 | .... | .... | .... | .... | .... | .... | .... | 1.46 | .... | 1.39 | .... | .... | .... | 1.29 | .... | 1.33 | .... | .... | .... | .... | .... | 1.31 | .... | .... |
| 37-37.9 | .... | .... | .... | .... | .... | .... | .... | 1.51 | .... | 1.43 | .... | .... | .... | 1.32 | .... | 1.37 | .... | .... | .... | .... | .... | 1.35 | .... | .... |
| 38-38.9 | .... | .... | .... | .... | .... | .... | .... | 1.56 | .... | .... | .... | .... | .... | 1.36 | .... | 1.42 | .... | .... | .... | .... | .... | 1.39 | .... | .... |
| 39-39.9 | .... | .... | .... | .... | .... | .... | .... | 1.61 | .... | .... | .... | .... | .... | 1.40 | .... | .... | .... | .... | .... | .... | .... | 1.43 | .... | .... |
| 40-40.9 | .... | .... | .... | .... | .... | .... | .... | 1.66 | .... | .... | .... | .... | .... | 1.43 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.10 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

# MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

## New York Stock Exchange

| 1936 High | 1936 Low | Week ended Oct. 31 Sales | Week ended Oct. 31 High | Week ended Oct. 31 Low | Week ended Oct. 31 Close | Stocks— | Total shares outstanding | Par value | Dividend rate | Payable or last paid | Dividends paid in 1935 | 1935 High | 1935 Low | 1934 High | 1934 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 125½ | 75 | 2,800 | 101 | 96½ | 100½ | Amerada Corp. | 788,675 | N.P. | 50cQ | 10-31-36 | $2.00 | 80 | 48½ | 55⅝ | 39 |
| 35⅛ | 26⅝ | 15,500 | 31½ | 29½ | 31⅛ | Atlantic Refining | 2,664,904 | $25 | 25cQ | 9-15-36 | 1.00 | 28 | 20½ | 35¼ | 21½ |
| 20 | 14⅛ | 9,300 | 18¾ | 18⅛ | 18⅜ | Barnsdall Corp. | 2,131,090 | $5 | 20cQ | 11-2-36 | ‡.20 | 14¾ | 5⅞ | 10 | 5⅞ |
| 23⅜ | 14 | 59,700 | 20⅜ | 19 | 19⅞ | Columbia Gas & Elec. | 11,610,036 | N.P. | 20c | 11-16-36 | .20 | 15¾ | 3⅜ | 19¼ | 6⅝ |
| 15¼ | 11½ | 33,600 | 13¾ | 13¼ | 13⅜ | Consolidated Oil Corp. | 13,983,287 | N.P. | 40cQ¶ | 11-16-36 | .25 | 12¼ | 6½ | 14¼ | 7¼ |
| 38½ | 28⅛ | 32,600 | 36⅜ | 33⅛ | 36⅜ | Continental Oil of Delaware | 4,682,671 | $5 | 50cQ¶ | 10-31-36 | .62½ | 35 | 15⅛ | 22¾ | 15¾ |
| 34¾ | 21 | 1,600 | 25½ | 24⅝ | 24⅞ | General Asphalt | 387,149 | $10 | 50c | 12-10-36 | .25 | 22½ | 11¾ | 23½ | 12 |
| 12¼ | 6⅜ | 12,200 | 9⅞ | 9⅜ | 9½ | Houston Oil (new) | 1,098,618 | $25 | .... | 10-17-30 | .... | 7 | 1½ | 5⅝ | 2½ |
| 29⅜ | 17¼ | 12,900 | 29¼ | 27¾ | 28⅜ | Mid-Continent Petroleum | 1,843,872 | $10 | 75cSA | 12-1-36 | .40 | 20½ | 9½ | 14¾ | 9⅛ |
| 26¼ | 16¾ | 1,200 | 22⅝ | 21⅝ | 22 | Mission Corporation | 1,399,345 | N.P. | .... | ..... | .... | 17¾ | 10⅜ | .. | .. |
| 70⅞ | 19⅞ | 3,600 | 69 | 65⅝ | 68¾ | National Supply of Delaware | 382,591 | $25 | .... | 5-15-31 | .... | 20⅞ | 9 | 21⅛ | 10 |
| 17½ | 12⅛ | 21,300 | 14 | 13¼ | 13¾ | Ohio Oil Co. | 6,563,377 | N.P. | 25cSA | 6-15-36 | .80 | 14¼ | 9¼ | 15⅞ | 8½ |
| 18⅛ | 11¾ | 3,600 | 18 | 17 | 17¾ | Pacific Western Oil | 1,000,000 | N.P. | 25c | 12-23-35 | .25 | 14 | 6¾ | 9⅜ | 5½ |
| 4¼ | 1⅜ | 800 | 2⅝ | 2¼ | 2½ | Panhandle P. & R. | 198,770 | N.P. | .... | ..... | .... | 1⅞ | ½ | 2½ | ⅝ |
| 49⅜ | 38⅛ | 17,600 | 45⅜ | 44¼ | 44⅞ | Phillips Petroleum | 4,449,467 | N.P. | 50cQ¶ | 9-1-36 | 1.25 | 40 | 13⅜ | 20⅜ | 13⅜ |
| 17½ | 11⅞ | 6,700 | 17¼ | 16½ | 17⅛ | Plymouth Oil Co. | 1,050,000 | $5 | 25c | 9-30-36 | .25 | 13 | 6½ | 16⅜ | 7¼ |
| 24⅞ | 16 | 39,900 | 18⅜ | 17¼ | 18 | Pure Oil Co. | 3,038,370 | N.P. | .... | 9-1-30 | .... | 17 | 5⅞ | 14⅞ | 6⅛ |
| 43⅝ | 30½ | 4,600 | 34 | 32⅞ | 33 | Seaboard Oil of Delaware | 1,244,283 | N.P. | 25cQ | 9-15-36 | 1.00 | 36⅞ | 20¾ | 38⅜ | 20¾ |
| 27⅜ | 14¾ | 21,500 | 26¾ | 25½ | 26¼ | Shell Union Oil | 13,070,625 | N.P. | .... | 6-30-30 | .... | 16½ | 5½ | 11½ | 6 |
| 126¼ | 110½ | 6,100 | 126¼ | 125 | 126 | Shell Union Oil pfd. | 400,000 | $100 | 1.37½ | 10-1-36 | .... | 111 | 63⅛ | 89 | 57 |
| 6¾ | 3½ | 1,500 | 4 | 3⅞ | 4 | Simms Petroleum | 461,698 | $10 | 1.25 liq. | 7-20-36 | 11.75 liq. | 18¾ | 4¾ | 17⅛ | 7¼ |
| 36½ | 19½ | 13,600 | 36½ | 33¾ | 35½ | Skelly Oil | 1,008,514 | $15 | .... | 12-15-30 | .... | 20½ | 6½ | 11½ | 6 |
| 17⅛ | 12½ | 109,600 | 17⅛ | 16⅛ | 16⅞ | Socony-Vacuum | 31,151,075 | $15 | 25cSA | 9-15-36 | .30 | 15¾ | 10⅝ | 19⅞ | 12½ |
| 47⅝ | 35 | 38,100 | 39⅞ | 38⅛ | 39¼ | Standard Oil of California | 13,014,754 | N.P. | 30cQ¶ | 9-15-36 | 1.00 | 41⅛ | 27¾ | 42⅞ | 26½ |
| 40½ | 32¾ | 44,600 | 40½ | 38⅛ | 40⅜ | Standard Oil (Indiana) | 15,215,677 | $25 | 25cQ† | 9-15-36 | 1.00 | 33⅜ | 23 | 32¾ | 23¼ |
| 30¾ | 25 | 200 | 29½ | 29½ | 29½ | Standard Oil of Kansas | 200,000 | $10 | .... | 10-31-34 | .... | 32 | 20 | 41 | 26 |
| 70 | 51⅛ | 54,600 | 68⅞ | 65¼ | 68½ | Standard Oil of New Jersey | 25,856,081 | $25 | 75cSA¶ | 6-15-36 | ‖1.25 | 52⅜ | 35¾ | 50⅛ | 39¼ |
| 91 | 72 | 1,300 | 80½ | 80 | 80 | Sun Oil | 1,733,013 | N.P. | 25cQ** | 12-15-36 | $1 & 7% Stk. | 77 | 60½ | 74¼ | 51½ |
| 47¾ | 28⅞ | 56,500 | 47¾ | 44 | 47⅛ | Texas Corp. | 9,340,069 | $25 | 25cQ† | 10-1-36 | 1.00 | 30¼ | 16½ | 29⅜ | 19⅝ |
| 15¼ | 9¼ | 23,300 | 13 | 12¼ | 12¾ | Texas Pacific Coal & Oil | 880,703 | $10 | 25c | 8-1-36 | .... | 9¼ | 3¼ | 6½ | 2½ |
| 19⅜ | 14⅜ | 15,700 | 19⅜ | 18½ | 19⅜ | Tide Water Associated | 5,642,342 | N.P. | 15cQ | 12-1-36 | .... | 15⅞ | 7⅝ | 14⅜ | 8 |
| 106½ | 100⅝ | 600 | 105 | 104½ | 104¾ | Tide Water Associated pfd. | 626,221 | $100 | $1.50Q | 10-1-36 | $6.50 | 104½ | 84 | 87 | 64½ |
| 28½ | 20⅜ | 7,300 | 23⅝ | 23 | 23¼ | Union Oil of California | 4,386,070 | $25 | 25cQ | 8-10-36 | 1.00 | 24 | 14¾ | 20½ | 11½ |
| 31⅝ | 22⅝ | 900 | 29 | 28⅞ | 29 | Union Tank Car Co. | 1,200,000 | N.P. | 30cQ | 9-1-36 | 1.20 | 26½ | 20⅞ | 25¾ | 15⅝ |
| 5¼ | 2¾ | 2,900 | 3⅜ | 3⅛ | 3⅜ | Wilcox Oil & Gas | 424,839 | $5 | .... | 5-10-28 | .... | 3⅛ | 1 | 5¾ | 2 |

*Ex-dividend. †Plus extras. ‡Also 50 per cent in stock of Barnsdall Ref. §Partly on account of accumulation. ‖Dividend 4/75 Mission Corp. paid 3-15-35. ¶Includes extras. **Plus 6% stock.

## New York Curb Exchange

| 1936 High | 1936 Low | Week ended Oct. 31 Sales | Week ended Oct. 31 High | Week ended Oct. 31 Low | Week ended Oct. 31 Close | Stocks— | Total shares outstanding | Par value | Dividend rate | Payable or last paid | Dividends paid in 1935 | 1935 High | 1935 Low | 1934 High | 1934 Low |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 13¼ | 2,500 | 18⅝ | 17½ | 18⅛ | Bridgeport Machine Co. | 260,000 | N.P. | .... | 5-1-30 | .... | 14⅛ | 3¾ | 3¾ | ½ |
| 50 | 39¾ | 200 | 45½ | 44½ | 45 | Buckeye Pipe Line Co. | 200,000 | $50 | $1Q | 12-15-36 | $3.00 | 42½ | 30½ | 38 | 26 |
| 4⅞ | 1⅞ | 14,400 | 2½ | 2¼ | 2½ | Carib Syndicate | 799,020 | 25c | .... | ..... | .... | 4¼ | 1⅝ | 5½ | 1⅓ |
| 124¾ | 105 | 150 | 119¾ | 119¾ | 119¾ | Chesebrough Mfg. Co. | 120,000 | $25 | $1.50Q | 9-30-36 | 6.50 | 157 | 115 | 150 | 116 |
| 7⅜ | 3 | 35,400 | 4⅜ | 4 | 4⅛ | Cities Service | 37,804,394 | N.P. | .... | 6-1-32 | .... | 3¼ | ¾ | 4¼ | 1¼ |
| 4 | ⅝ | No sales | .. | .. | .. | Colon Oil | 2,200,000 | N.P. | .... | ..... | .... | 2⅛ | ½ | 3¼ | ½ |
| 4⅛ | 1½ | 7,500 | 3½ | 3⅛ | 3⅛ | Cosden Oil | 399,687 | $1 | .... | ..... | .... | 1½ | ¼ | 3⅞ | ½ |
| 34⅜ | 19⅞ | 10,800 | 27⅝ | 26⅞ | 27¼ | Creole Petroleum | 6,974,356 | $5 | 25c | 7-15-36 | .20 | 23¾ | 10 | 14⅜ | 9⅝ |
| 14⅛ | 9 | 2,400 | 13⅞ | 13¼ | 13½ | Darby Petroleum | 351,390 | $5 | 25cSA | 7-15-36 | .50 | 8⅞ | 4 | 7½ | 4⅛ |
| 6¾ | 1⅞ | 3,100 | 6 | 5⅝ | 5⅞ | Derby Oil & Refining | 263,162 | N.P. | .... | ..... | .... | 2 | ¾ | 2¼ | 1 |
| 47 | 38½ | 50 | 47 | 47 | 47 | Eureka Pipe Line | 50,000 | $50 | $1Q | 11-2-36 | 4.00 | 38 | 33¼ | 37 | 30 |
| 105¼ | 72 | 12,900 | 105⅛ | 98 | 104 | Gulf Oil Corp. | 4,538,101 | $25 | 25c | 10-1-36 | .... | 74¾ | 50¼ | 76⅜ | 49⅜ |
| 76½ | 57 | 5,000 | 66⅞ | 64 | 66 | Humble Oil & Refining (new) | 8,923,935 | N.P. | 50c† | 10-1-36 | 1.25 | 64 | 44 | 49⅛ | 33¼ |
| 24½ | 20 | 8,700 | 22⅞ | 22⅜ | 22½ | Imperial Oil of Canada | 26,919,871 | N.P. | 62½cSA†‡ | 6-1-36 | 1.25 | 22½ | 15⅜ | 17⅞ | 12⅝ |
| 9¾ | 5½ | 300 | 7⅜ | 7¼ | 8 | Indiana Pipe Line | 300,000 | $10 | 40cSA† | 11-14-36 | .35 | 6⅛ | 3⅝ | 6⅞ | 3⅝ |
| 39⅝ | 32⅞ | 8,100 | 37 | 36¼ | 36½ | International Petroleum | 14,247,088 | N.P. | $1.25†‡ | 6-1-36 | 2.50 | 39¾ | 28 | 33⅜ | 19⅜ |
| 15⅜ | 9⅞ | 8,300 | 13¼ | 12⅜ | 12⅝ | Louisiana Land & Exp. | 3,000,000 | N.P. | 10cQ | 9-15-36 | .10 | 11⅜ | 4⅜ | 5 | 2⅛ |
| 15½ | 7⅜ | 6,500 | 15 | 14 | 14⅞ | Lion Oil Refining | 270,000 | N.P. | 50c | 10-15-36 | .... | 8⅛ | 3½ | 6 | 3⅜ |
| 14¼ | 9⅞ | 4,500 | 12⅞ | 12½ | 12¾ | Lone Star Gas | 5,382,723 | N.P. | 20cSA | 8-15-36 | .30 | 10⅞ | 4½ | 8⅜ | 4¼ |
| 8⅜ | 5 | 2,100 | 5¼ | 5⅛ | 5¼ | Mountain Producers | 1,682,182 | $10 | 30cSA | 7-1-36 | .90 | 5⅜ | 4⅛ | 5½ | 4 |
| 23 | 17⅝ | 1,300 | 20 | 19¼ | 19⅜ | National Fuel Gas | 3,810,183 | N.P. | 25cQ | 10-15-36 | 1.25 | 20 | 11⅜ | 18⅛ | 13⅛ |
| 15⅜ | 9¼ | 600 | 11½ | 11⅛ | 11⅛ | National Transit | 509,000 | $12.50 | 40cSA | 6-15-36 | .75 | 10⅝ | 6¾ | 9½ | 7 |
| 4½ | 2⅞ | 800 | 3½ | 3⅜ | 3⅜ | New Bradford Oil | 1,445,202 | $5 | 10cSA | 5-15-36 | .20 | 3¼ | 2 | 2½ | 1¾ |
| 6⅝ | 1⅝ | 3,400 | 3½ | 2¾ | 2¾ | New Mexico and Arizona | 1,000,000 | $1 | .... | ..... | .... | 2½ | 1 | 2⅜ | 1 |
| 6¼ | 4¼ | 100 | 5 | 5 | 5 | New York Transit | 100,000 | $5 | 15cSA | 10-15-36 | .30 | 4⅞ | 3 | 4¾ | 3 |
| 9¼ | 4⅞ | 500 | 8½ | 7¾ | 7¾ | Northern Pipe Line | 120,000 | $10 | 15cSA | 7-1-36 | .50 | 8 | 5¼ | 7 | 4⅝ |
| 6⅝ | 3¼ | 26,800 | 5¾ | 5⅜ | 5⅜ | Pantepec Oil | 1,608,700 | N.P. | .... | ..... | .... | 4⅜ | 1¼ | 2⅝ | ⅞ |
| 19¼ | 4¼ | 4,100 | 16⅛ | 14¾ | 14¾ | Root Petroleum Co. | 336,045 | $1 | 25c | 8-1-36 | .... | 5 | 1½ | .. | .. |
| 4¾ | 1⅞ | 700 | 3¼ | 3 | 3⅛ | Ryan Consolidated | 296,931 | N.P. | .... | ..... | .... | 2½ | ⅝ | 3⅜ | ⅞ |
| 40⅞ | 32¼ | 1,000 | 40⅛ | 40 | 40 | South Penn Oil | 1,200,000 | $25 | 60c† | 9-30-36 | 1.35 | 34½ | 21⅝ | 26½ | 17½ |
| 7⅞ | 3¼ | No sales | .. | .. | .. | Southern Pipe Line | 100,000 | $10 | 10cSA | 9-1-36 | .30 | 5 | 3⅞ | 5½ | 3½ |
| 60 | 44¾ | 50 | 44¾ | 44¾ | 44¾ | Southwest Penna. Pipe Lines | 35,000 | $50 | $1.00Q | 10-1-36 | 5.00 | 56 | 44¼ | 47 | 41 |
| 23⅜ | 17⅛ | 6,800 | 20¼ | 20 | 20½ | Standard Oil of Kentucky | 2,604,790 | $10 | 35c | 9-15-36 | 1.25 | 24 | 18 | 18⅜ | 14⅝ |
| 14⅝ | 11 | 100 | 12¼ | 12¼ | 12¼ | Standard Oil of Nebraska | 188,403 | $25 | .... | 6-20-34 | .... | 12 | 7¾ | 16⅞ | 8¼ |
| 40 | 21⅜ | 2,900 | 39¼ | 37¾ | 38⅞ | Standard Oil of Ohio | 753,740 | $25 | 25c | 10-15-36 | .... | 23⅝ | 11½ | 28½ | 12¼ |
| 5 | 2⅝ | 8,600 | 3⅜ | 3¼ | 3¼ | Sunray Oil | 1,910,248 | $1 | 5c | 9-1-36 | .... | 2⅞ | ⅞ | 2 | ⅓ |
| 9¾ | 5⅜ | 3,900 | 6 | 5⅜ | 5⅜ | Texon Oil & Land | 336,028 | N.P. | 15cQ | 9-30-36 | .60 | 6⅞ | 5 | 11 | 4⅜ |
| 7½ | 4⅜ | 24,900 | 6½ | 5¾ | 6⅛ | Texas Gulf Producing Co. | 888,087 | N.P. | 5c | 12-15-36 | .... | 4¾ | 2½ | 7 | 3⅝ |

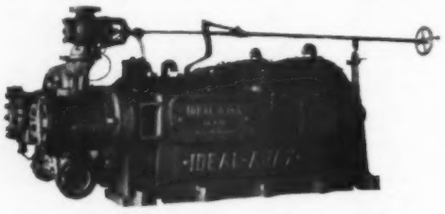
*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

# NEW OR IMPROVED EQUIPMENT

## Ideal-Ajax Drilling-Engine of Improved Type Introduced

Improvements, added to the Ideal-Ajax 14 by 14 twin-cylinder roller-bearing steam drilling-engine handled by the National Supply Co., Toledo, Ohio, include roller-bearing crank and connecting rods and automatic cylinder relief or dump valves,



both of which are regular equipment on all engines.

The automatic cylinder relief or dump valves, attached to each end of both cylinders, contain a differential piston or valve. This is subjected, on the bottom, to steam-chest pressures, and when these are exceeded by the pressure within the cylinders the valve opens automatically, allowing any water inside the cylinder to escape. Safe operation is provided by the new extra-heavy automatic steam manifold relief or bleeder valve. This valve remains closed while the engine is operating, but when the throttle valve closes it automatically opens and relieves pressure from the manifold and cylinders, preventing the engine from turning over owing to a leaky throttle valve.

A contribution to greater ease of operation is the Ajax reverse lever and throttle control. This enables the operator to control both the reverse lever and throttle valve simultaneously by means of one hand-wheel. Sprockets with machine-cut teeth are also now available to give greater efficiency and smoothness in operation. They can be furnished both for No. 4 A.P.I. chain and the new 3⅛-inch pitch double roller chain introduced recently. An improved type McCord lubricator which supplies oil in direct proportion to requirements is regular equipment. Each of its three feeds can be adjusted independently.

The Ideal-Ajax drilling-engine is made safely to withstand a continuous steam working pressure up to 400 pounds per square inch. It is particularly adapted to deep drilling where long strings of pipe, unusually strong equipment and high steam pressures are necessary.

## Bulletins, Booklets and Other Literature for the Trade

A four-page bulletin, No. 2,231, announced by Ingersoll-Rand, 11 Broadway, New York, describes the Coroc diamond drill, which is equipped with a master gauge registering in pounds the pressure of the bit against the rock.

A booklet of 16 pages sent on request by the Lane-Wells Co., 5610 South Soto Street, Los Angeles, Calif., describes and illustrates the company's packers and liner-hangers.

"Nickel Steels in Sucker-Rod Service" and "Largest Oil-Well Forgings" are among articles of special interest to oil men in the latest issue of Nickel Steel Topics, published by the International Nickel Co., Inc., New York.

Five new booklets on Enduro stainless steel have been released by the Republic Steel Corp. Cover illustrations show mill operations in the production of Enduro. One booklet explains the popularity of stainless steel. The second gives data on Enduro 18-8. The third booklet is devoted to the straight-chromium types. The fourth discusses the heat-resisting types, and the fifth treats Enduro chromium steels, which are intermediate between ordinary carbon and stainless steels.

"Data on Controlled Vibration and Screen Efficiency" is the title of a new book released by the Productive Equipment Corp., 4600 South Kedzie Avenue, Chicago. Complete data on screening and grading in various industries, charts, data and engineering information, as well as a description of "Selectro" vibrating screens are covered.

A request sent to the Dodge Manufacturing Co., Mishawaka, Ind., brings a bulletin describing the new DR sheave (demountable-rim type) for V-belt drives.

The United States Rubber Products, Inc., New York, has issued a practical manual which will serve as a ready reference for engineers, plant operators and executives on the application of rubber mountings to modern industrial use. Descriptive illustrations show specific uses to which these mountings have been put.

## W. S. Proctor Is Mid-Continent Representative for Regan

W. S. Proctor (better known as "Proc") has taken charge of the entire Mid-Continent territory for Regan Forge & Engineering Co. Offices and

*W. S. PROCTOR*

warehouse have been opened at 1502 Maury Street, Houston, Tex. Mr. Proctor for many years was active in drilling, production and contracting. He cased and capped numerous wild gassers in the Texas Panhandle. He assisted in the designing of the Regan gas-controller for drilling through gas with standard tools. In 1932 he made an exhaustive report on oil and gas conservation in the Panhandle district for the Texas Railroad Commission. He has been on the sales engineering staff of the Regan organization 10 years.

Plans of the Regan organization call for an extension of its facilities in New Mexico, throughout the Gulf Coast and other localities in the Mid-Continent.

## Pittsburgh Equitable Offering New Type of Liquid Meter

The Pittsburgh Equitable Meter Co., Pittsburgh, Pa., has announced a complete line of its liquid meters equipped with Tret-O-Units as manufac-

tured by % Proportioneers % Inc. The meters are designed for all proportional processing of fluids. Typical applications in the refining industry include treating gasoline and lubricating oils, blending a number of constituents to form a synthetic product; blending more than two products simultaneously; treating with acid and subsequently neutralizing with caustic—all in step with primary flow. They can be used also for automatic blending of asphalt and naphtha cutbacks.

## Single Horizontal Three-Stage Compressor Is Introduced

An improved line of single horizontal three-stage compressors for pressures from 750 to 2,500 pounds is now offered by Worthington Pump & Machinery Corp., Harrison, N. J. These compressors are particularly suited for higher pressures, since the compression cylinder requires only one packing-box, which is subjected solely to moderate pressures. Leakage thus is reduced to a negligible and controllable factor. This feature is especially desirable when compressing valuable or inflammable gases.

The compressor is particularly applicable for high air pressure for any purpose, also for the compression of oxygen, hydrogen, helium and other special gases as well as refinery gas or straight natural gas. Double-row tapered-roller bearings, automatic self-oiling frames with oil-tight covers. Worthington feather and ring plate valves, and efficient intercooling between stages are features. A choice of steam or motor drive is offered.

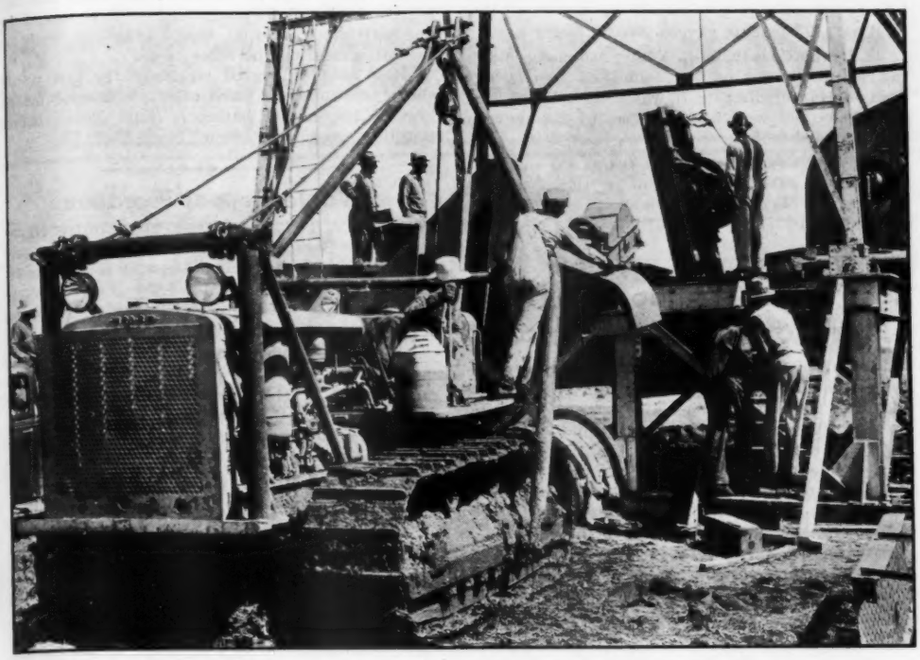
## Cement Company Changes Name

Stockholders of the International Cement Corp. voted to change the name to the Lone Star Cement Corp. because, Charles L. Hogan, president, explained, the products of the company's domestic subsidiaries have been marketed for years under the trade name "Lone Star." He said also that the new federal tax laws made it advisable to liquidate domestic subsidiaries and transfer their assets to the parent organization.

## New Reo Service Announced

Announcement of a new service on remanufactured engines has been made to motor-truck owners by the Reo Motor Car Co. through Elijah G. Poxson, president of the Reo Sales Corp. Reo will remanufacture used engines on an exchange basis, replacing old engine parts with new parts where needed and completely remaking the motor.

## SPEEDING UP RIG MOVING IN THE OIL FIELDS



On the Quintana Petroleum Co.'s operations a 95-horsepower "Caterpillar" diesel tractor is seen moving a rig to a new location in the Greta field, Texas. The derrick, boiler and pumps were mounted on skids and moved by the tractor without dismantling.

## BEAUTY IN A BEARING

One of the largest spherical roller bearings in the world built by SKF has 46½ inches outside diameter, 27½ inches bore and 15⅛ inches width.

Twenty-three and one-half tons of this one bearing size were purchased by U.S.S.R. for its Zaporojstal steel works cold mill equipment, designed by United Engineering & Foundry Co.

## Marmon-Herrington Develops All-Wheel-Drive Vehicle

A new all-wheel-drive vehicle engineered and constructed for an entirely new field is announced by the Marmon-Herrington Co., Inc., Indianapolis, Ind., as an addition to its line of all-wheel-drive Ford V-8 models. This unit consists of the Ford V-8 passenger, light-delivery or commercial-car chassis (112-inch wheelbase) into which are engineered and built Marmon-Herrington all-wheel-drive units such as driving front axle, four-speed transmission, transfer case and semi-elliptic front springs.

The chief feature of this model LDI-4x4 is that it can be used to carry passengers, haul material or pull light trailer equipment either on or off the highway. The added traction and safety afforded by the driving front axle make possible operations over difficult terrain that would not be attempted by ordinary light trucks or by any type of passenger car. At the same time it can be used for "off the road" work ordinarily assigned to larger and more expensive vehicles. One of the major producing oil companies has purchased several of these Marmon-Herrington all-wheel-drive units for use in its surveying and exploitation work.

## Lincoln Electric Co. Puts New Electrode on the Market

Steels known as 4-6 per cent chromium steels, which are rapidly gaining acceptance in applications requiring resistance to crude-oil corrosion at high temperatures and pressures, can now be successfully welded by use of a new electrode announced by the Lincoln Electric Co., Cleveland, Ohio. "Chromeweld 4-6" electrode permits full development of the valuable properties of the low-chromium steels. These steels possess a resistance to sulfide corrosion 4 to 10 times that of ordinary steel and a resistance to oxidation at 1,000° F., three times as great.

The electrode contains the essential element of molybdenum and provides weld metal possessing the necessary high creep strength and other qualities essential for welding the 4-6 per cent chromium steels. Such steels, welded with the electrode can be soft annealed to physical properties similar to those of mild carbon steel, and therefore rendered suitable for equipment where severe cold working is applied during fabrication.

Applications in which the new electrode now makes available the simplicity and economy of arc welded fabrication include: furnace tubing, cracking stills, hot oil transfer lines, heat exchangers, bubble tower caps, return bends, valves, superheater headers and other similar applications. "Chromeweld 4-6" is a coated electrode and is made in three sizes, one-eighth, five-thirty-seconds and three-sixteenths inch.

## Now "Overcoats" for Boilers

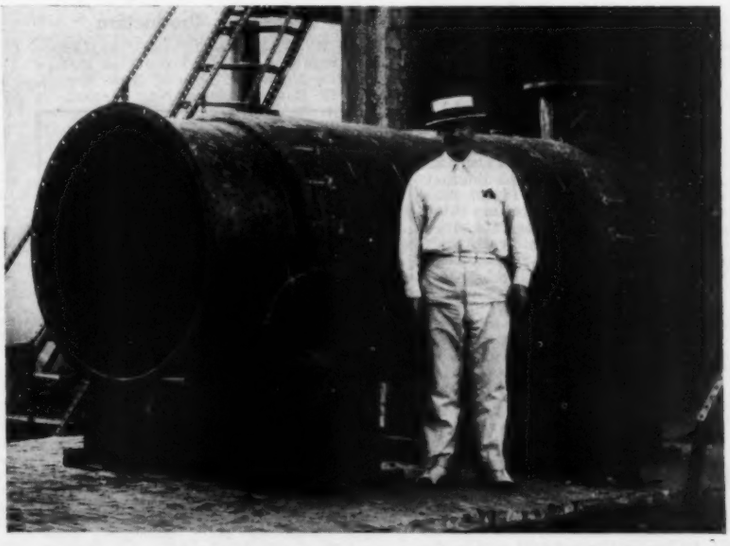
"Overcoats for boilers" may be the vogue in many oil fields this winter, with the advent of the Lucey steel-jacketed boiler insulation recently placed on the market. Advantages claimed include saving in fuel and greater boiler efficiency, one-third less pressure drop and steadier steaming, the effects of weather conditions being negligible. The Lucey insulation casing consists of a steel shell one-sixteenth inch thick lined with a blanket 2 inches thick of Eagle-Picher mineral wool insulation, with three-quarters inch air space next to the boiler. The jacket is made in 16 sections easily installed after the boiler is set up, and is held in place by adjustable steel bands, easily removable for boiler inspection or repairs.

## NEW ELECTRIC-WELDED BOILER UTILIZES WASTE HEAT

The first electric-welded boiler made in Oklahoma combines with a battery of two 850-horsepower diesels, utilizing their waste heat to add to the economy and efficiency of plant operation for an Oklahoma utility company. The unit, a waste-heat boiler, was built by Black, Sivalls & Bryson to generate steam in house pumps and other auxiliary equipment.

Special merit is claimed for the waste-heat boiler in industrial plants where steam and hot water are in demand for process work such as gas plants, refineries, utilities and chemical plants. Small space is needed to accommodate this waste-heat economizing unit and no brickwork setting is required. Simple construction, safety of operation and accessibility for cleaning are features. The boiler, 48 inches in diameter and 8 inches long has face-to-face flue sheets and approximately 500 square feet of heating surface.

During construction the shell and combustion chamber were welded complete. The shell seams were X-rayed and the entire vessel was stress-relieved as a unit. Designed according to the



A.S.M.E. power boiler unit, it bears the stamping of the National Board of Boiler and Pressure Vessel Inspectors. R. J. Furr, of Fidelity & Casualty Co., inspected the boiler throughout its construction.

## Eastern Fields

*(Continued from Page 79)*

In Roane County, the South Penn Oil Co. completed No. 3 H. W. Allen farm in Reedy district in the Berea sand at a depth of 2,597 feet. It is showing for 15 bbls. a day.

### Gas Wells

In Boone County, the Owens Illinois Glass Co. completed several gas wells. In Scott district, this company completed one on the Sarah Mullens farm at a depth of 1,912 feet, having a volume of 210,000 feet a day at 1,862-75 feet. Same company completed No. 23 Cassingham Coal Land Co. lease at 2,335 feet for 485,000 feet of gas at 2,281-93 feet.

In Sherman district, Boone County, Owens Illinois Glass Co. completed No. 26 Peytona Coal Land Co. at 2,774 feet. The volume is 180,000 feet a day. No. 21 on the same lease was deepened to 4,241 feet and was finally abandoned as unprofitable.

In Calhoun County, the Dun Mar Oil Co. completed a good gas well on the Mary E. Johnson farm in Washington district. It gauges 3,285,000 feet a day from the Injun sand with the gas at 1,769-75 feet.

In Doddridge County, the Philadelphia Gas Co. completed No. 6,092 J. S. Britton farm in South West district at 2,062 feet good for 90,000 feet of gas at 2,002-22 feet.

In Gilmer County, Pittsburgh & West Virginia Gas Co. No. 7,592 Floyd W. Beall in DeKalb district is a gas well at a total depth of 1,946 feet, with 37,320 feet of gas before shot at 1,832-37 feet. In Troy district, W. H. Miller drilled a test on the Lulu and C. J. Simon farm through the Gantz sand to 2,303 feet and it was dry.

In Harrison County, Hope Natural Gas Co. completed No. 3 on the Landorah Harbert farm in Eagle district at a depth of 2,006 feet as a gas well gauging 800,000 feet a day.

In Lincoln County, the Owens Illinois Glass Co. completed a test on the W. M. Adkins farm in Jefferson district as a gas well gauging 217,000 feet a day. The Big lime was at 1,732-1,927 feet; Big Injun, 1,927-56 feet; Berea, 1,927-56 feet; gas, 2,458 feet.

In Marion County, R. S. Monroe drilled a test on the Metz heirs farm in Mannington district through the Fourth sand to a depth of 3,360 feet and it was a dry hole.

In Marshall County, the Valley Run Oil & Gas Co. completed a test on the S. T. Yoho farm in Liberty district as a gas well in the Big Injun sand at 2,175 feet. It gauges 200,000 feet a day.

In Roane County, L. C. Young completed a fair gas well as a test on the John Rex Kee 30-acre tract in Harper district. It was drilled in the Salt sand 1,498 feet with 3,084,940 feet of gas showing at 1,509-1,526 feet.

In Wood County, Sable Oil & Gas Co. drilled a test on the Eliza Elliott farm in Union district through the Maxon sand to a depth of 1,585 feet and it was dry.

## East Texas Landowner Says Proration Law Must Remain

KILGORE, Tex., Nov. 2.—Sam W. Ross, president of the East Texas Landowners' Association, said the Texas proration laws should never be repealed when informed that Representative Harry N. Graves of Georgetown, author of the proration law, expected to ask the next legislature to repeal the act. A large royalty owner and a refinery stockholder, Ross challenged Graves' statement the law is "choking off independent oil operators."

"The 96 refineries mentioned by Graves were never, in truth, refineries," Ross said. "Many were so-called 'coffee-pot' plants. The independent producer is making more money now than he got before proration was enacted."

Ross pointed out the average East Texan's payout was only 40 months before conservation was put into effect. Today, he said, the payout is about 100 months.

He was more concerned with the proposal to reduce marginal allowance. Present marginal allowables are set by law in direct proportion to the depth of wells. A 2,000-foot well cannot be prorated lower than 10 bbls. daily, while the daily allowable for a 3,500-foot well cannot go below 20 bbls.

There has been considerable discussion relative to proposed legislation that would make material changes in the marginal production schedules. Of the 21,584 wells in the East Texas field, 16,244 are classed as marginal producers. Ross was confident a bill would be introduced in the next session of the legislature to reduce marginal allowables.

"Further reduction of allowable in the East Texas field would throw all of the wells into the marginal class," he contended. "This would be unconstitutional, for it would place all wells in the same field on the same basis."

Ross said he feared repeal of the law would sharply change the price of oil. Oil sold for as low as 10 cents a barrel in East Texas before proration and the present price is $1.15.

## Would Repeal Proration

AUSTIN, Tex., Nov. 2.—Representative Harry N. Graves, Georgetown, author of the Texas proration law, told the United Press it is his present intention to attempt repeal of the act at the regular session of the state legislature which meets next January.

No recommendation for repeal of the act was made by the house of representatives oil investigation committee in a report filed before the special session of the legislature adjourned. Mr. Graves is a member of the investigation committee.

"Representative A. P. Johnson and I wrote the proration law," Mr. Graves said, "at the direction of a committee, placing in it what the committee directed. It was a mistake. It has just been a weapon in the hands of the big refiners to scourge the little one. Out of 96 little refineries that were operating when the act was passed, all are gone.

"Rule 37 (the spacing rule for wells under the law) has become a rule of property in Texas and since its adoption in 1919 the court at Austin has practically held that this has abolished the right of partition of property if the property is one that contains oil."

Mr. Graves said he had no substitute to propose for the proration law but would abolish it entirely.

George Howard Coxon, Anglo-Iranian Oil Co., Ltd., petroleum technologist, left New York last week for a trip to California before the American Petroleum Institute annual meeting at Chicago which he will attend. He is to participate in the informal discussion scheduled by the Institution of Petroleum Technologists which will sponsor a dinner for its membership November 10 at the Stevens Hotel in Chicago. Dr. Robert E. Wilson, vice chairman of Pan American Petroleum & Transport Co., will be the toastmaster.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### Oil Industry Printing

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Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

### Business Opportunities

GEOLOGIST desires connection on percentage basis plus expenses. Highest credentials. Address Box G-823, The Oil and Gas Journal, 415 Lexington Avenue, New York City.

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2—300 Ampere Lincoln Welders, speed control, A-1 condition. Service Co., 3732 Cedar Avenue, Cleveland, Ohio.

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FOR SALE: 1—Type 10 Lee C. Moore Champion Spudder and Cleaning out machine and 1—Allis-Chalmers Tractor to operate. I. T. I. O. Company, Bartlesville, Oklahoma.

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FOR SALE—5,000 bbl. Steel Tank—1 National Drilling Machine, both in good condition. Located at Bixby, Okla. Address Box H-511, The Oil and Gas Journal, Tulsa, Oklahoma.

### Leases—Production

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**THE OIL AND GAS JOURNAL**

Tulsa, Oklahoma

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# Oil Man's Calendar

### November

9-12—Chicago, American Petroleum Institute, 17th annual meeting, Stevens Hotel.

10—Chicago, Institution of Petroleum Technologists dinner, 7 p.m., Stevens Hotel.

20—Tulsa, annual meeting, Kansas-Oklahoma division, Mid-Continent Oil and Gas Association.

20-21—Houston, Tex., Society of Petroleum Geophysicists mid-year meeting.

### November-December

30-Dec. 1—Oklahoma City, Okla., Independent Petroleum Association, Biltmore, annual meeting.

### December

1—Oklahoma City, Okla., Interstate Oil Compact Commission, State Capitol, 10 a.m.

4—Houston, Tex., annual meeting, Texas division, Mid-Continent Oil and Gas Association.

5-13—Detroit, Mich., First International Consumers Petroleum Exposition.

6-11—New York, National Exposition of Chemical Industries, Grand Central Palace.

15—Tulsa, annual meeting directors, Mid-Continent Oil and Gas Association.

### February, 1937

8-10—Louisville, Ky., Kentucky Petroleum Marketers Association, Brown Hotel.

23-25—Milwaukee, Annual Convention, Wisconsin Petroleum Association.

### March

16-18—Los Angeles, Calif., A.A.P.G. annual meeting.

### April

15-16—Cleveland, Ohio, 34th semiannual meeting National Petroleum Association, Cleveland Hotel.

# A semifinished nut for high temperatures

## The Bethlehem Treated Nut

WHEN temperatures are high the Bethlehem Treated Nut is right in its own element. This nut is made of high-carbon steel, hot-forged for close-knit sinewy structure. Even at temperatures up to 1000 deg. F., it is known for its remarkably small distortion—one oil-refinery test showed 57 per cent less than the nearest rival under conditions of severe heat.

This nut is semifinished—machined to accurate dimensions that assure a positive grip for the wrench, and firm, even seating.

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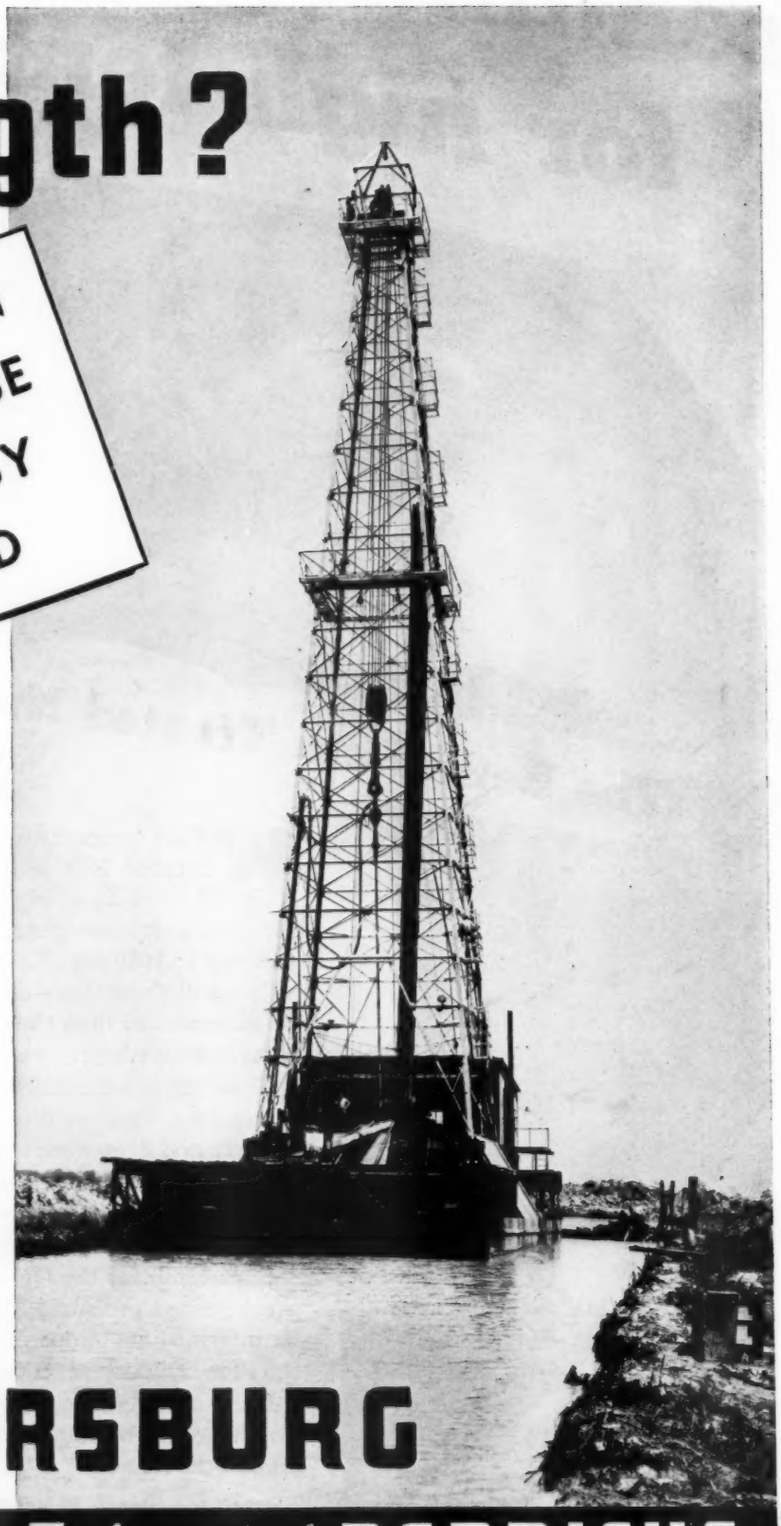
**BETHLEHEM STEEL COMPANY**

# Strength?



6,000 MEN WOULD BE AN EASY LOAD

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• The combination of superior design and faultless fabrication that makes for championship performance is found in every Parkersburg Derrick . . . just call your Parkersburg representative for complete details on any size or type.

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# PARKERSBURG

*Faultlessly-Fabricated* DERRICKS



**The Oil and Gas Journal**, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription prices: Domestic, $6.00 a year; foreign, $7.00 a year. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Oklahoma, under the Act of March 3, 1879.

THERE'S a way to stop rust from robbing metal of its life. Paint metal surfaces with Dutch Boy Red-Lead. Then you can be sure they are protected against "rust—the robber."

Paint made with Dutch Boy Red-Lead provides a solid, tough, tenacious coating—one that not only keeps out rust-forming moisture but also resists the destructive action of other common causes of corrosion, such as gases, smoke and salt water.

Dutch Boy Red-Lead comes in both paste and liquid form, the latter including a quick-drying type for use when allowable drying time is short. The pigment in every case is pure red-lead that contains more than 97% $Pb_3O_4$, thus assuring easier application, higher spreading rate, and a uniform film of greater density.

For complete information on protecting iron and steel against corrosion, send for our free booklet, "Structural Metal Painting." It covers such subjects as conditions affecting the life of paint on metals, proper paint formulation, testing and judging the value of paint, estimating areas and costs.

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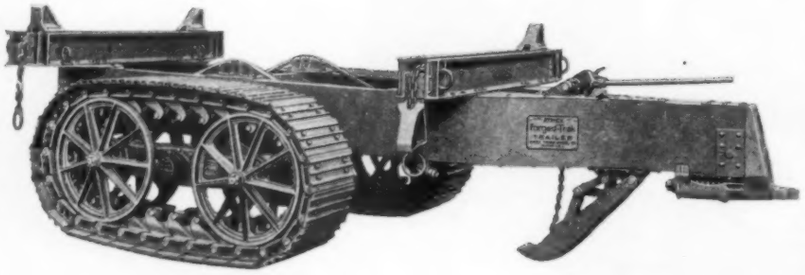
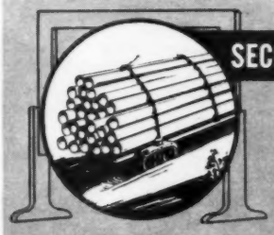
# HOW TO GET OVER THE HURDLES IN OIL COUNTRY HAULING

## FIRST HURDLE—BAD WEATHER

When roads look like a hog wallow—when the rain pours and the grief piles up—Athey Forged-Trak Trailers and Wagons will take your load through! Sand and uneven ground mean nothing to these sturdy, long-lived Athey units, with their non-clogging, self-cleaning wheels. No interruption of your hauling—no delays in any season.



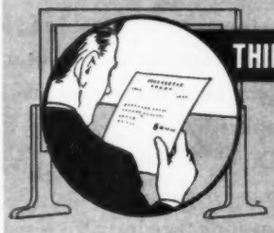
Athey Forged-Trak Tractor Trailer—10, 15 and 20-ton capacities.



## SECOND HURDLE—BIG LOADS

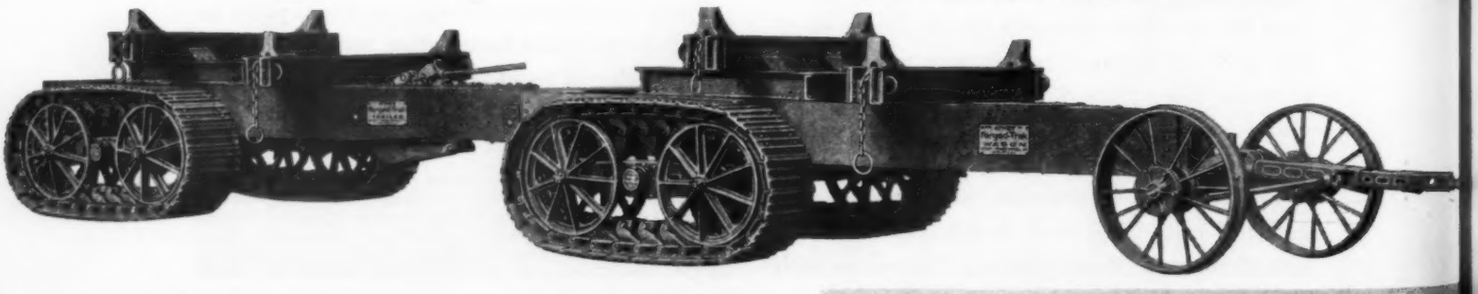
Load them up with drill stems—casings—pumping assembled units—anything you have that's "mean" to haul. These Athey Forged-Trak units have greater load-supporting areas. Their chassis is spring mounted to cushion loading and road shocks. Their frames are reinforced to put the strength where you want it.

Athey Forged-Trak Tractor Wagon—10, 15 and 20-ton capacities.



## THIRD HURDLE—HIGH HAULING COST

Delays pile up hauling expense. So does "wo sister" hauling equipment. Athey Forged-Trak Wagons and Trailers, used with Caterpillar Diesels, give you *lowest* cost per ton-mile. They won't "fold up" when the job is tough. They won't stop when the weather is bad. They use the minimum of tractive power because they are so light running. Write us for operating data on Athey Forged-Trak Wagons and Trailers.



Athey Forged-Trak Combination Wagon—20, 30 and 40-ton capacities.

**ATHEY TRUSS WHEEL CO.**

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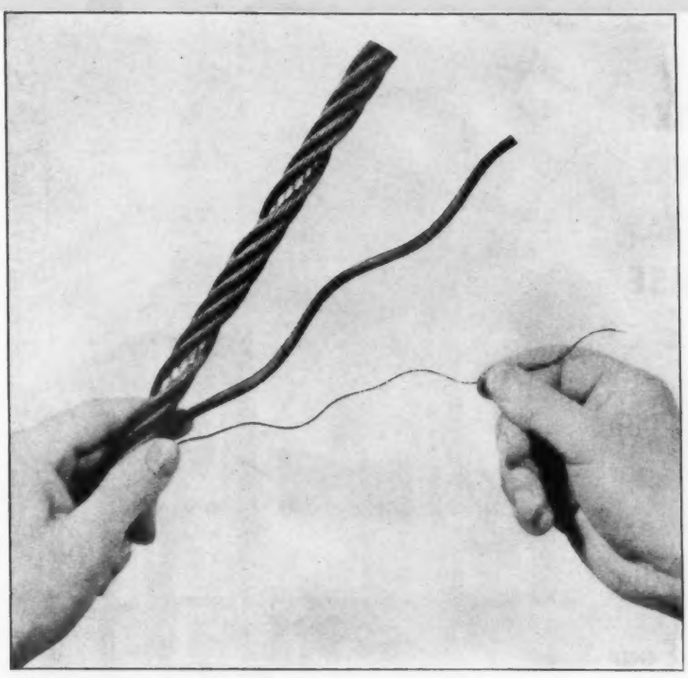
**ATHEY**

**Forged-Trak**

REG. TRADE MARK

# why MONARCH WHYTE STRAND

## PREformed Rotary Lines give satisfactory service



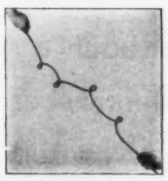
Macwhyte specially designed PREformed wire lines are recommended for rotary drilling because their construction gives them great fatigue resistance to withstand severe bending, high speed and continuous operation—factors which tend to shorten the life of ordinary wire lines.

Macwhyte also manufactures specially designed PREformed Swabbing Lines, Casing Lines, Tow Lines, Tubing Lines, Winch Ropes, Sucker Rod Lines and Fall lines—as well as non-preformed lines for other drilling operations.

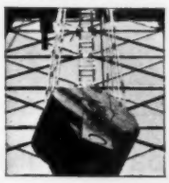
*Distributors throughout the oil fields. Warehouse at Texas & Pacific Terminal Building, Fort Worth*

**Macwhyte's special PREforming preshapes every wire... every strand to the exact shape it takes in the finished line**

**. . . increases flexibility . . . decreases internal stress**



**. . . resists kinking when line is not under load**



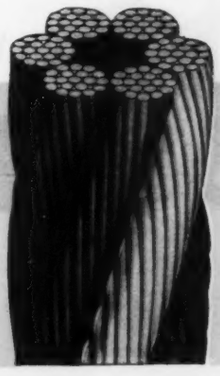
**. . . reduces fatigue caused by continuous high-speed bending.**

Internally lubricated, too, with a special kind of lubrication that climatic temperatures do not affect . . . to hold internal corrosion and internal friction in check.

# MACWHYTE

## PREformed WIRE LINES

2470



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**AND THE PREMIER OIL REFINING CO. WILLOW SPRINGS, TEXAS SAVED THE EXPENSE OF A BUILDING . . .**

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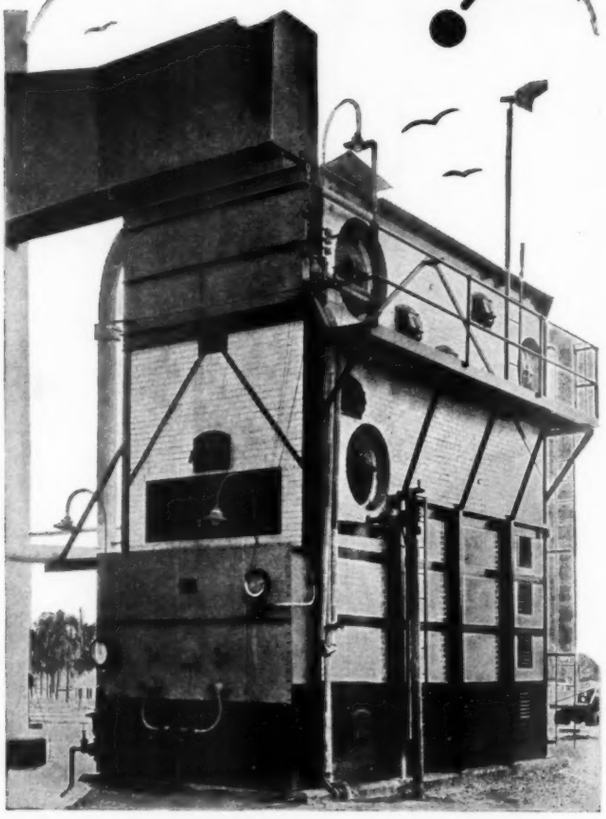


258 horse power Vogt boiler, with air cooled furnace walls, at Premier Oil Refining Co., Willow Springs, Texas

Manufacturers of: Water Tube Boilers, Drop Forged Steel Valves and Fittings, Ice Making and Refrigerating Machinery, Oil Refinery Equipment, Heat Exchangers.

# Vogt WATER TUBE BOILERS

# MULTI-FLAME LINDEWELDING

## *Facilitates Full-Strength Pipe Line Welds*

Multi-Flame Lindewelding, when properly used, confers a new degree of dependability upon pipe line construction. It makes the maintenance-free life of the line entirely dependent upon the durability of the pipe and fittings. The Lindeweld can be made constantly as strong as or stronger than the pipe, even where the tensile strength of the pipe base material is as high as 110,000 lb. per sq. in. At the same time the Lindeweld is tough—ductile—and permanently tight.

Linde has been identified with pipe line welding since 1911, and has cooperated with the builders on more than 21,000 miles of overland pipe lines. Linde service operators, because of this long and varied experience, can help you gain the full benefit of Multi-Flame Lindewelding on your pipe line projects. The nearest Linde office will supply full details. The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation, New York and principal cities.

The upper illustration is a schematic cross-section of the Multi-Flame Lindewelding Head in action. The small flames preheat the vee while the main flame melts the welding rod and post-heats the weld to impart an unusual degree of toughness to the completed joint.

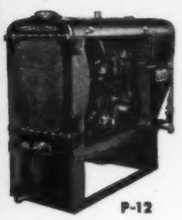
The lower illustration shows Lindewelding, the modern pipe line construction method, as it is used on a rolling weld.

*Everything* for Oxy-Acetylene Welding and Cutting

LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES FROM UCC LINDE UNION CARBIDE

# INTERNATIONAL ENGINES

## Cut Power Costs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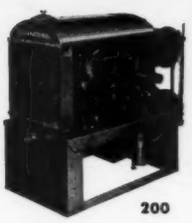
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***Brief Specifications***
**INTERNATIONAL POWER UNITS**

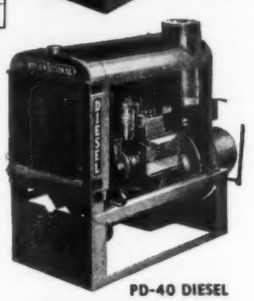
| Model | No. Cylinders | Max. Horsepower | Cont. Load Horsepower—80% of Max. H. P. | R. P. M. |
|---|---|---|---|---|
| P-12 | 4 | 22.5 | 18 | 1400 and 2000 |
| 200 | 4 | 33.5 | 26.8 | 1000 |
| P-30 | 4 | 39.5 | 31.6 | 1150 |
| 300 | 4 | 47 | 37.6 | 1050 |
| PA-40 | 6 | 59.5 | 47.6 | 1400 and 1800 |
| PD-40 Diesel | 4 | 62.5 | 50 | 1250 |
| PA-50 | 6 | 66.5 | 53.2 | 1400 and 1800 |
| PD-80 Diesel | 6 | 100 | 80 | 1400 |
| PA-100 | 6 | 106 | 85 | 1400 |

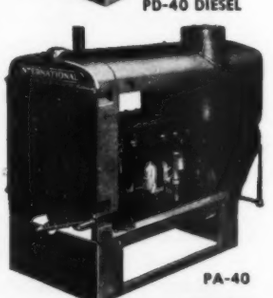
300

INTERNATIONAL ENGINES can easily become a most important factor in your business. That's the experience of others—and it is the best guide to follow when you need industrial power.

International Engines are used in many different ways. For stationary work, these rugged, dependable, multi-cylinder engines are built into the compact power units shown here. The line includes 4 and 6-cylinder power units for *gasoline, kerosene, distillate,* or *natural gas,* and 4 and 6-cylinder *Diesel* power units. Sizes range from 12 to more than 100 h.p.

These efficient engines are also built into International Wheel Tractors and TracTracTors (crawlers) for heavy work in industry and commerce. And they are widely used by well-established manufacturers to power road machinery, locomotives, shovels, lighting plants, and many other types of equipment. They are backed by International Harvester's more than 30 years of experience building engines, tractors, and motor trucks, and by a network of distribution and service. The nearby International Industrial Power dealer or Company-owned branch will give you specifications, prices, and other information on request.


PD-40 DIESEL


PA-40

**INTERNATIONAL HARVESTER COMPANY**
(INCORPORATED)
606 So. Michigan Ave. Chicago, Illinois

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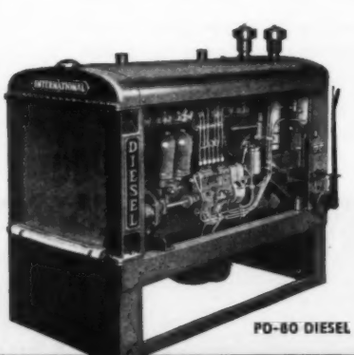
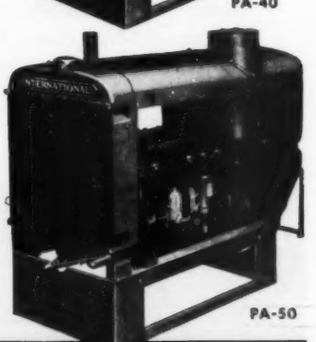
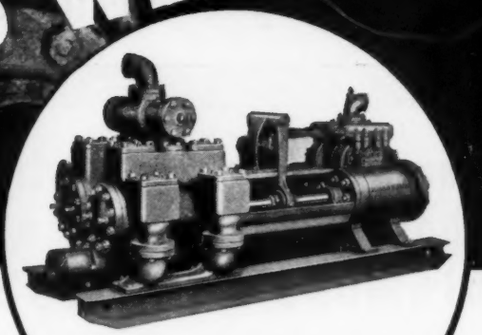


PD-80 DIESEL


PA-50

# INTERNATIONAL HARVESTER

• *Blowout Preventers must resist high pressure. Standard composition for this one for years has been a Nickel-chromium cast steel. The maker, Oil Center Tool Co., Houston, Texas.*



• *"Gumbo Buster" slush pump, fitted with castings of Nickel-chromium steel for fluid end parts. Mfd. by American Well & Prospecting Co., Corsicana, Texas.*

## *. . . is the Oil Field which uses*

# NICKEL ALLOY STEELS

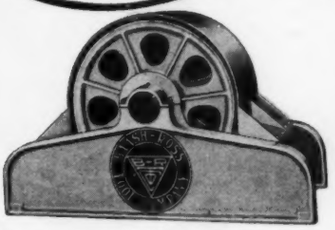
● Durability under high stress . . . that's the one common factor that these four different makers of oil field equipment found for the four different pieces of equipment shown on this page. And each used cast steel alloyed with Nickel to gain that durability.

As wells grow deeper, oil equipment must grow stronger. The cast frame for the crown block unit, for instance, must carry the load of drill lines weighing more than 100 tons . . . ten years ago 40 tons was exceptionally high.

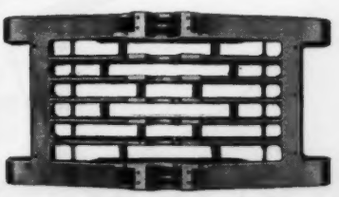
But keen metallurgical control keeps pace with these increasing demands. Adding a small proportion of Nickel, sometimes with other elements, sometimes without, gives steel greater density of grain structure that makes for higher strength, toughness, and wear resistance. Even without heat treatment, the cast steel in this blowout preventer has a tensile strength of 90,000 p.s.i.

Get the facts about Nickel, and you'll decide on Nickel alloys, for the same reasons these makers did. Consultations on problems involving the use of Nickel is invited.

• *SAE 3135 Nickel-chromium cast steel forms the table of this rotary, made by International Derrick & Equipment Co., Beaumont, Texas.*



• *This one-piece frame, for the unit type crown block shown above, is a Nickel Steel casting. Skillful design utilizes the strength of the material to eliminate excess weight. Made by the Baash-Ross Tool Co., Los Angeles, Calif.*



**THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.**

DIAMOND DISTRIBUTORS SAY

# Public Acceptance *Phenomenal!*

**Owe everything to D-X through trying times of sub-normal price conditions**

"D-X lubricating motor fuel and the full line of Diamond Products have come through for us with flying colors. Each year has shown increases over prior years, with 1936 gallonage, so far—much greater than anticipated."

Obion County Oil Company
Union City and Kenton, Tenn.

**Rural trade enthusiastic about performance of DIAMOND KEROSENE**

"Each year since changing to Diamond Products, we have had substantial gain in volume. Both local and traveling trade show marked preference for Diamond Products . . . their uniform high quality has been of material assistance in our growth."

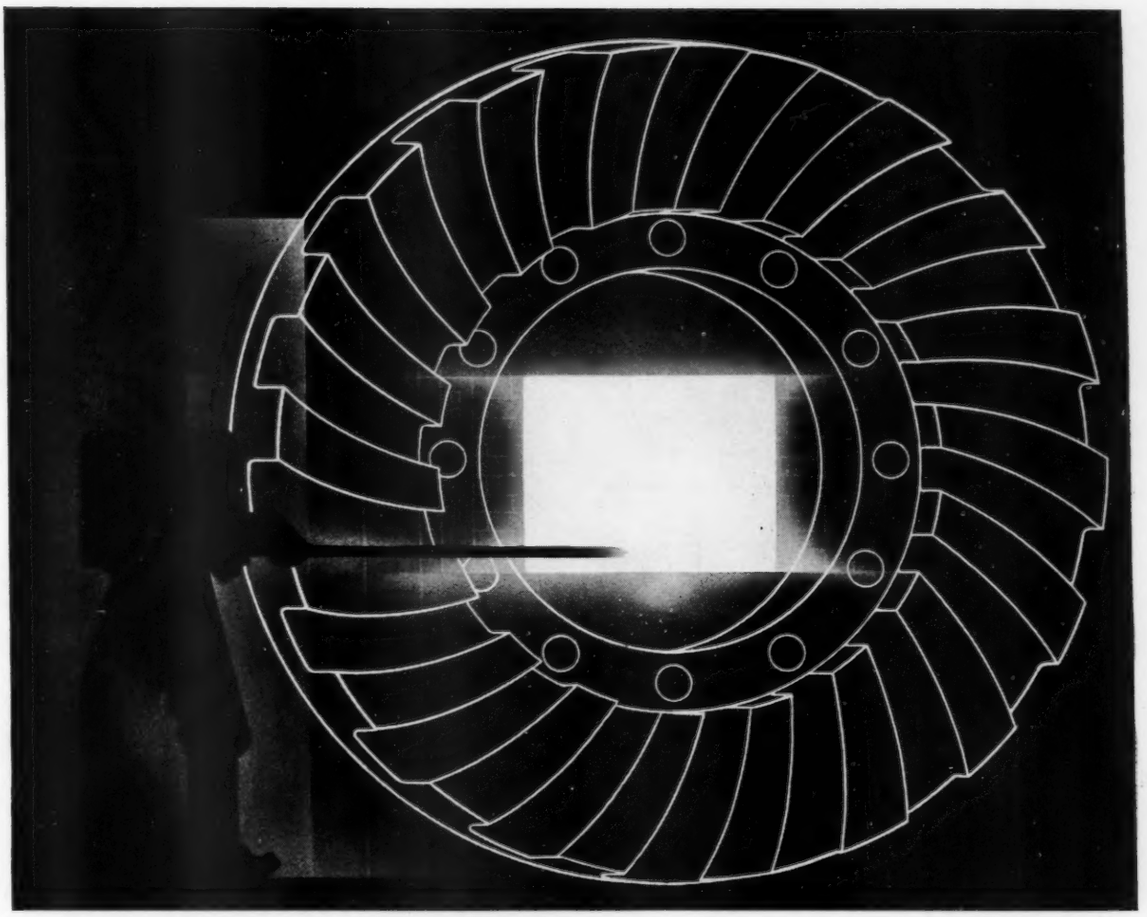
De Forest Oil Company
Farmington, Missouri

**While providing outstanding performance to motorists—D-X and D-X Ethyl, the *lubricating* motor fuels, Diamond 760 Motor Oil and the other Diamond Products have been building up volume for Diamond distributors and dealers, large or small.**

**If you are interested in these profit possibilities that may exist in your territory, wire or write the nearest Diamond office.**

**MID-CONTINENT PETROLEUM CORPORATION**

CHICAGO OMAHA TULSA, OKLAHOMA TERRE HAUTE WATERLOO



# MOLY carburizing steels reduce distortion

DISTORTION is one of the greatest troubles encountered in carburizing steels. Moly—"industry's most versatile alloying element"—reduces distortion after heat-treatment to a predictable minimum. Case example: In a Nickel-Moly sleeve of 4-ft. diameter and comparatively thin section, the maximum distortion was less than .015 in.

Moly carburizing steels also take a greater and more uniform depth of case in a shorter time. The case retains its hardness at higher operating temperatures. And both case and core are tougher and have a better bond. Are you fully acquainted with the many-sided qualities of Moly, particularly toward the better and more uniform heat-treating of steels? Our book, "Molybdenum," contains a wealth of useful technical knowledge. Write for it. Also ask us to put you on the mailing list of "The Moly Matrix," our periodical news-sheet designed to help alert engineers and production heads to keep abreast of iron and steel progress. And, if interested in solving some difficult ferrous problem of your own, be free to enlist the facilities of our experimental laboratory.

**CLIMAX MOLYBDENUM COMPANY, 500 FIFTH AVENUE, NEW YORK CITY**

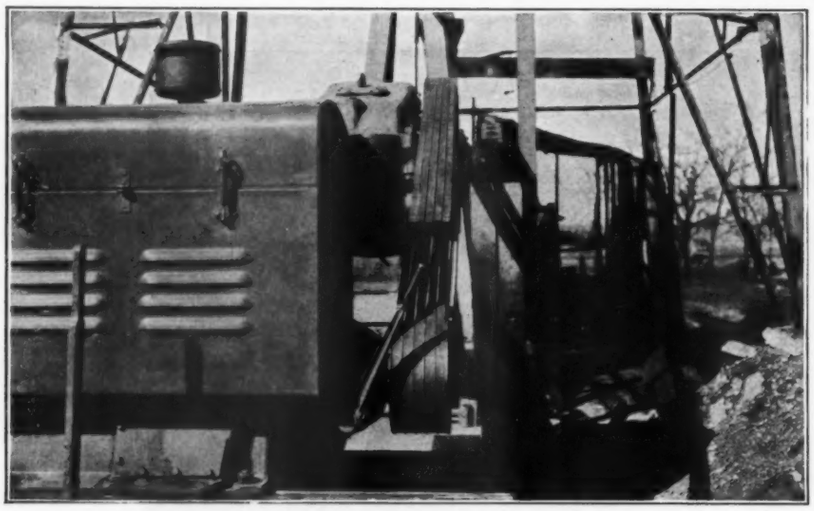
PRODUCERS OF FERRO-MOLYBDENUM, CALCIUM MOLYBDATE AND MOLYBDENUM TRIOXIDE

**MOLY** Mo-lyb-den-um

CUTS COSTS

CREATES SALES

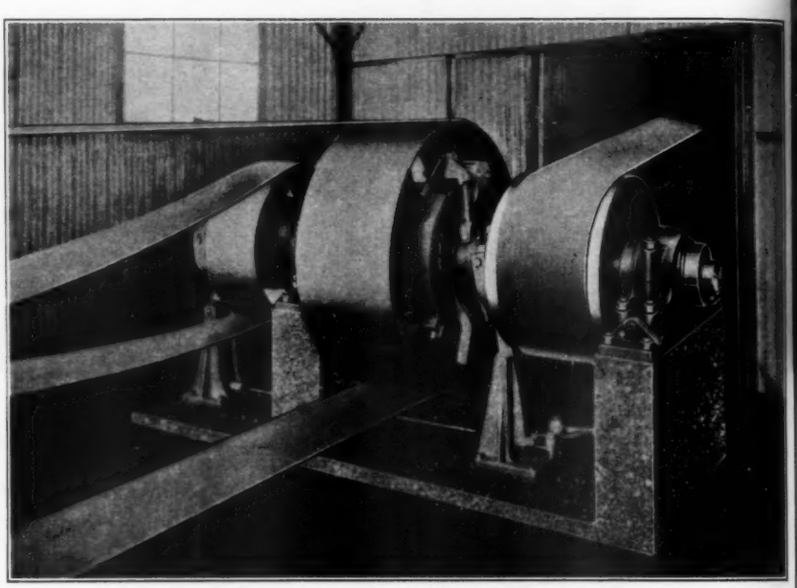
# MANHATTAN BELTS



Typical Oil Pumping Unit on which Condor V-Belts are used.

## For Your Oil Pumping Requirements

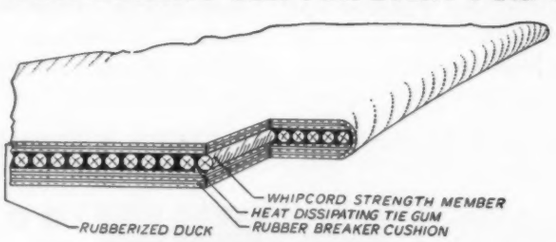
Belts for the oil fields are subjected to extremes of climatic conditions, unusual strains and stresses and a punishing type of service which would quickly destroy the average belt. For years Manhattan has had men who have grown up with the oil industry, both in the field and at the home plant, supervising the development of belting and other products—to fit the special conditions of oil field service. As a result we feature in this announcement three types of belting which are making enviable records for long and dependable performance—Manhattan A. P. I. Compensated LOW TENSION Belt is the pumping and general purpose belt for the oil industry. Manhattan Whipcord Endless Belt is recommended for drives where an endless belt can be used. Condor Whipcord V-Belt is the belt to use on new type Diesel Electric Units or wherever V-Belt drives are found in oil field service.



Manhattan A. P. I. Compensated Belt in use.

### AN OUTSTANDING BELT FOR EVERY PURPOSE

**MANHATTAN A. P. I. COMPENSATED**
**Patented**
The Low-Tension Rubber Belt with equalized ply stresses




**MANHATTAN ENDLESS WHIPCORD BELT**

**CONDOR WHIPCORD V-BELT**

**OTHER SPECIAL PRODUCTS FOR THE OIL INDUSTRY**

Rotary Hose, Oil-Loading Hose, Rubber Covered Pistons, Piston Liner Sleeves, Stuffing Box Rings, Hose for Steam, Water, Fire and Air, Brake Lining for Draw Works, etc., Paranite G. O. P. Tank Truck Hose, Slush Pump Intake Hose, Molded Rubber Products

*Distributed by The National Supply Companies—in all oil producing centers*

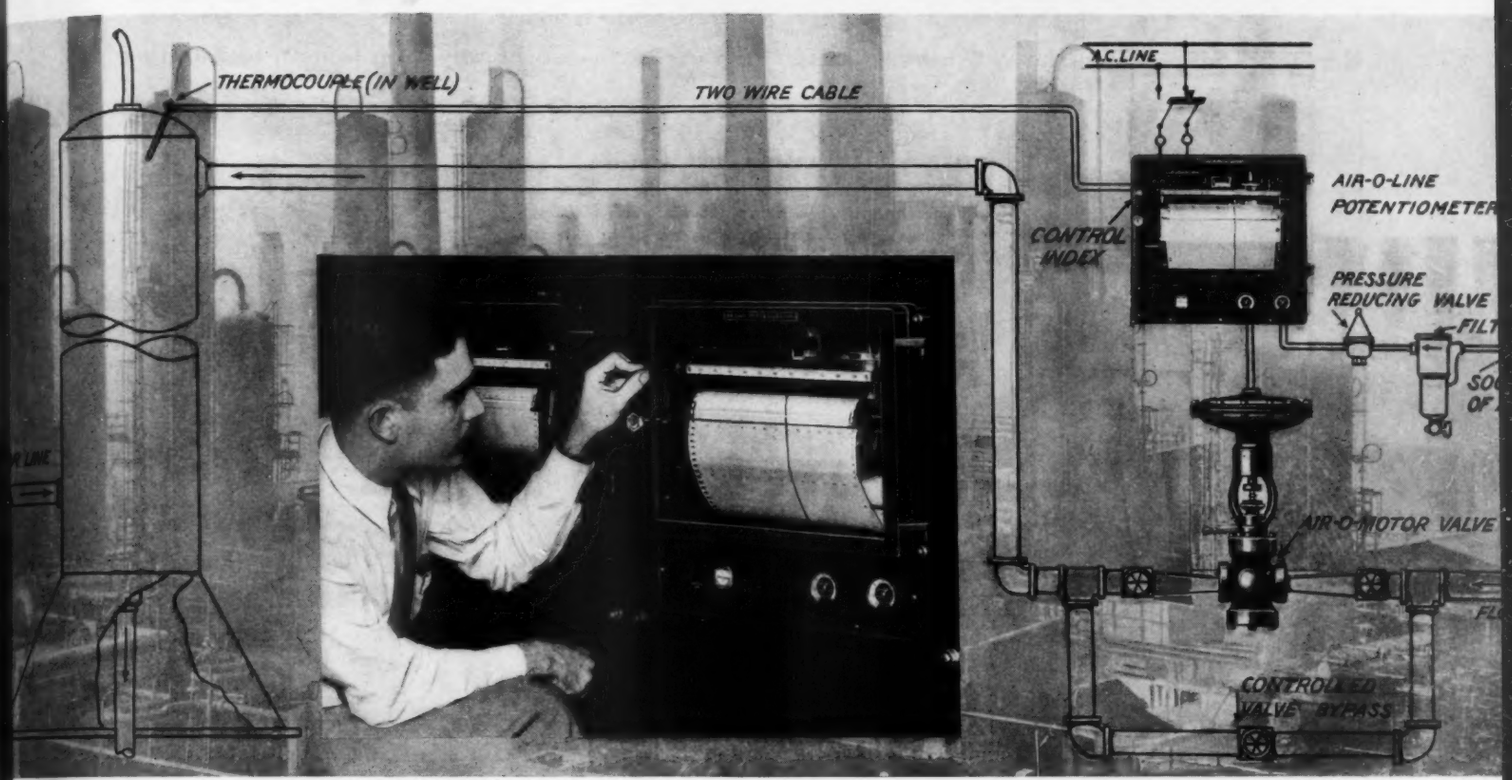
## THE MANHATTAN RUBBER MFG. DIVISION

OF RAYBESTOS-MANHATTAN, INC.

**EXECUTIVE OFFICES and FACTORIES, 70 TOWNSEND ST., PASSAIC, N. J.**

# NOW Air-o-Line GIVES YOU

## The Ideal Combination
## FOR TOP OF TOWER CONTROL




# Records and Controls Simultaneously

The Brown Air-o-Line Potentiometer Recording Controller combines in one instrument—the precision of the potentiometer and the flexibility of air operated control.

It assures the most accurate measurement and simultaneously records and controls temperatures in fractionating towers and other difficult refinery problems.

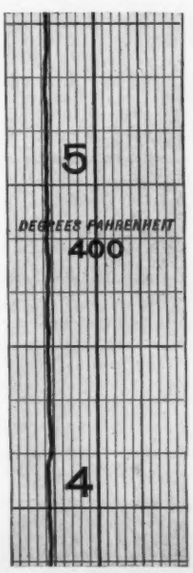
As thermocouples or resistance bulbs are used for temperature measurement—the measuring system cannot be damaged by excess temperature conditions.

Maintenance and operating interruptions are reduced to a minimum because *Electrical Wiring is used* instead of long runs of costly capillary tubing. Replacements are eliminated. Mechanical damage is easily and quickly repaired in the field.

The Brown Air-o-Line Potentiometer Controller can be mounted at any desired location remote from the point of temperature measurement without regard to distance or altitude.

The Brown Air-o-Line Potentiometer Controller responds to temperature changes as small as 1-10 of 1% of full scale. Such changes are continuously recorded *in terms of degrees Fahrenheit* on a direct reading 12-inch strip chart.

It has the inherent ability to position the control valve to suit the demand, automatically, regardless of process thruput or other variables.



Section of Chart Record (Actual Size)

Only in Brown Air-o-Line Potentiometer Controller will you find these outstanding advantages:

1. Combined electrical recording and air operated control.
2. External Calibrated Control Index which enables you to set the control point remotely.
3. "Graduated Throttling Range and Automatic Reset Dials" make it possible to "tune in" to process control as easily as dialing a radio.

With the Brown Air-o-Line Potentiometer Recording Controller closer measurement and positive control are easily obtained by simply setting the control index at the desired point, "tune in" throttling range and automatic reset. Air-o-Line then becomes fully automatic.

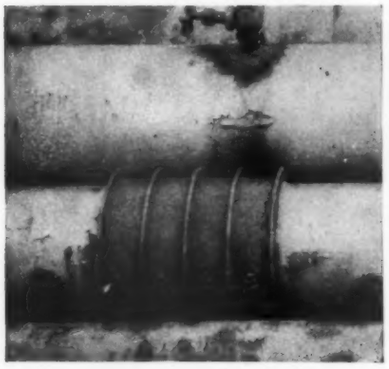
Write for Catalog No. 8901, The Brown Instrument Company, *a division of Minneapolis-Honeywell Regulator Company*, 4488 Wayne Avenue, Philadelphia, Pa. Canadian factory: 117 Peter Street, Toronto. European address, N. V. N., Minneapolis-Honeywell Company, Wydesteeg 4, Amsterdam-C, Holland.

# BROWN *Air-o-Line* POTENTIOMETER CONTROLLERS

*Outstanding Performance With Simplicity*

# SKINNER OFFERS A CLAMP FOR EVERY LEAK

**Unretouched pictures show Skinner Clamps in the field — absolutely permanent installations**

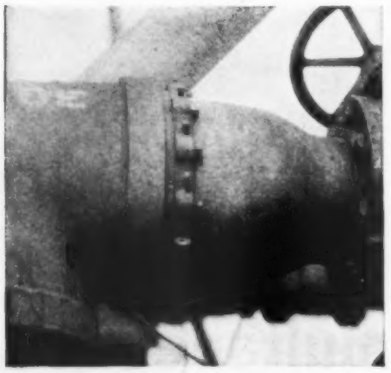


● **EMERGENCY PIPE CLAMP**

FOR stopping leaks in pipe lines, instantly, permanently. Quickly, easily applied. Pipe sizes ½" to 12". Standard in the petroleum industry for nearly forty years.

**PIPE LINE CLAMP** ●

FOR repairing long splits or very bad corrosion in pipe lines. Tremendously strong—suitable for highest pressures.

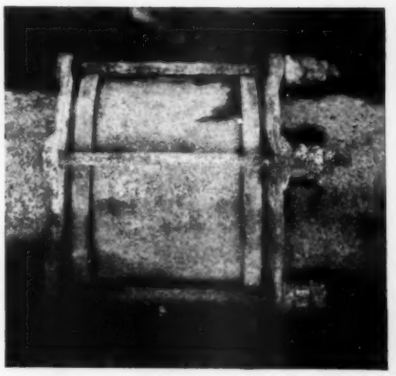


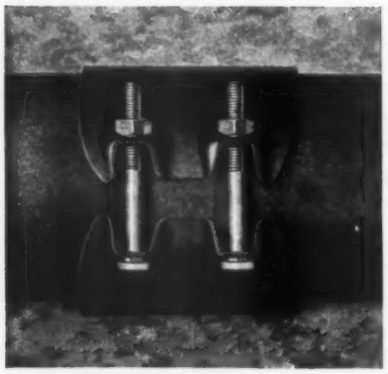
● **PIPE JOINT CLAMP**

FOR stopping leaks at joints where pipe is screwed into a fitting—any thread leak at tee, elbow, flange, gate coupling, or master gate. Without shutdown. Absolutely permanent.

**COLLAR LEAK CLAMP** ●

FOR stopping every type of collar leak, regardless of kind of collar used, or condition of line. Rough, tapered, or uneven collars easily clamped.





● **PRESSED STEEL ECONOMY CLAMP**

FOR repairing badly pitted and corroded pipe lines, at a minimum of cost. A tremendously strong clamp—sold in quantities for less than the cost of home-made repairs.

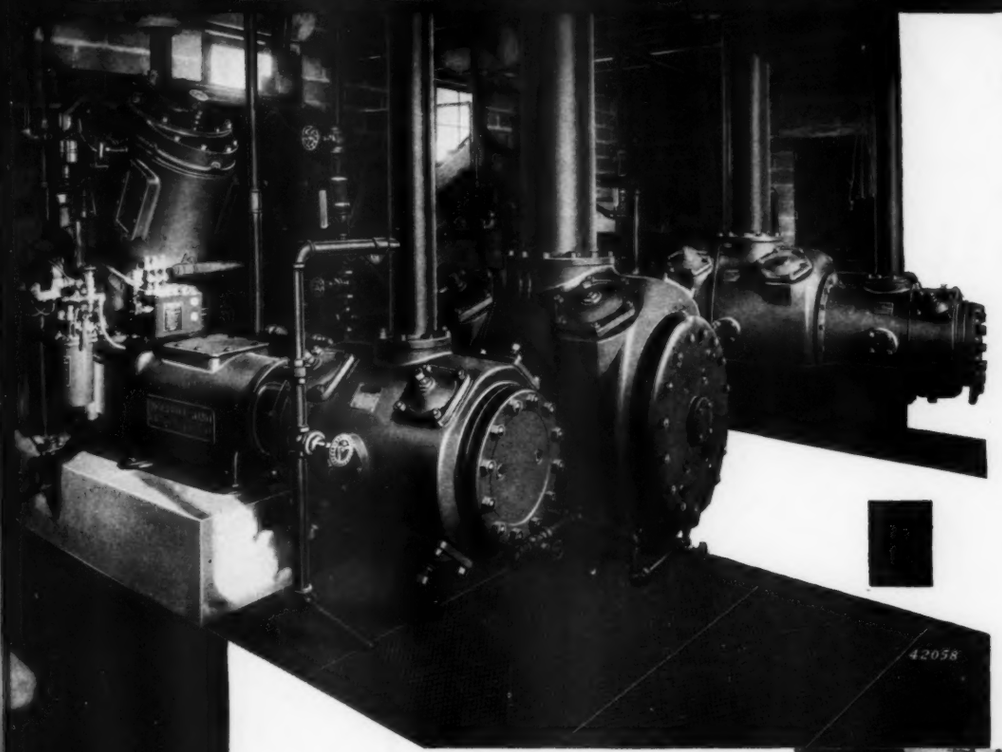
**HIGH PRESSURE WELD CLAMP** ●

FOR stopping pin hole leaks or splits in welds on welded steel pipe lines. A tremendous time-saver. Tested to 800 lbs. line pressure.

**GUARANTEED safe, secure, permanent under any pressure or temperature. GET COMPLETE CATALOG**

## M. B. SKINNER CO. *Est. 1898* SOUTH BEND, IND.

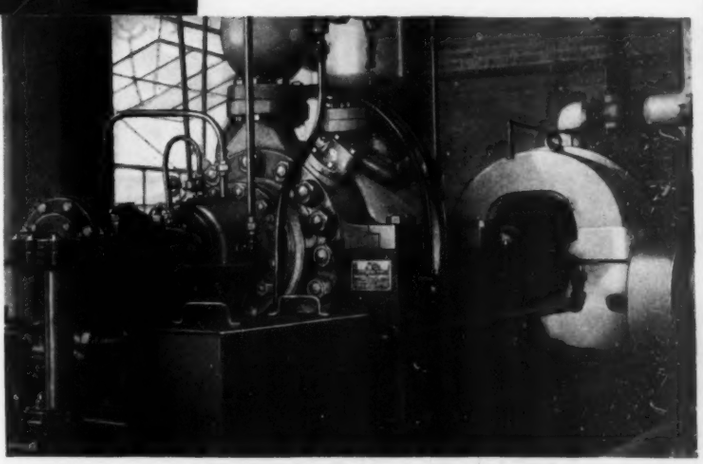
# GOOD! —TODAY and for YEARS to COME

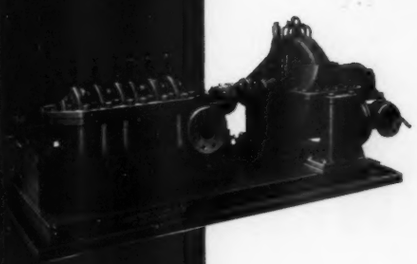


● The machines shown on this page are setting new standards. Every branch of the petroleum industry in the various parts of the world is sending us reports of enviable records such as: "10,000 hours of continuous operation;" "three years without repair;" "highly efficient operation;" etc. Ingersoll-Rand has again met the requirements for better compressors, engines and pumps.

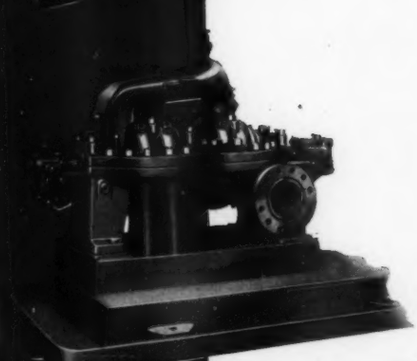
**—Two "XVG" units,** 125 hp. and 60 hp. two-stage compressors handling gas. These modern "V" type, 4-cycle units with horizontal compressor cylinders are available in four sizes. Bulletin 3065.

*Below*—**A five-stage "AHT" hot oil pump** that has given highly efficient service ever since it was installed in 1932.



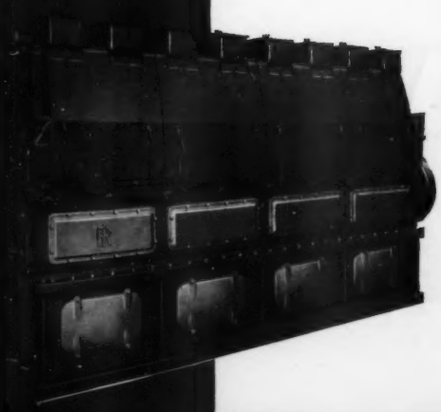


**Cameron multi-stage, centrifugal boiler feed pumps** have a world-wide reputation for reliability and efficiency. Capacities range from 25 to 3000 gpm. Pressures up to 1000 lbs. per square inch. Bulletin 7065.

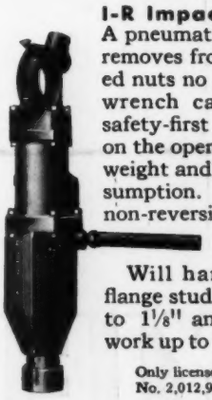


**RT Pumps.** These pumps send the oil forward in a steady stream at uniform pressure reducing the possibility of blown gaskets and leaks in the line.

Cameron Centrifugal Pipe Line Pumps for series operation are furnished with as many as six stages in a single casing. They are available in capacities ranging from fifteen to sixty-five thousand barrels per twenty-four hours, and for pressures up to one thousand pounds, according to the arrangement of the stations and the allowable line pressure.



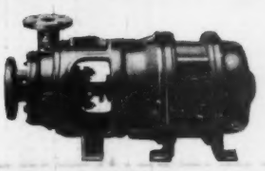
**Ingersoll-Rand Diesel Engines** are widely used in many industries. A number of installations have been in continuous operation for 17 years. Sizes range from 150 to 1500 hp. The new Type "S" vertical, single-acting, 4-cycle, solid injection engines are ideal for many refinery and oil field applications. Bulletin 10010.



**I-R Impact Wrench.**—A pneumatic wrench that removes frozen or corroded nuts no other portable wrench can handle. A safety-first machine, easy on the operator, lighter in weight and low in air consumption. Reversible or non-reversible.

Will handle hot line flange stud nuts from ⅝" to 1⅛" and on cold line work up to 1¼" stud nuts.

Only licensee of Pott Patents No. 2,012,916 and 2,049,273



**Cameron Motorpumps** solve and simplify a multitude of pumping problems. Pump and motor are mounted on a single shaft. Very little floor space is required. They can be mounted in any position. No special foundations are necessary. Capacities from 5 to 1000 gpm. Heads up to 500 ft. Bulletin 7664.

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# *The Wave of* Acceptance *Rolls On* as it blankets California's Fields

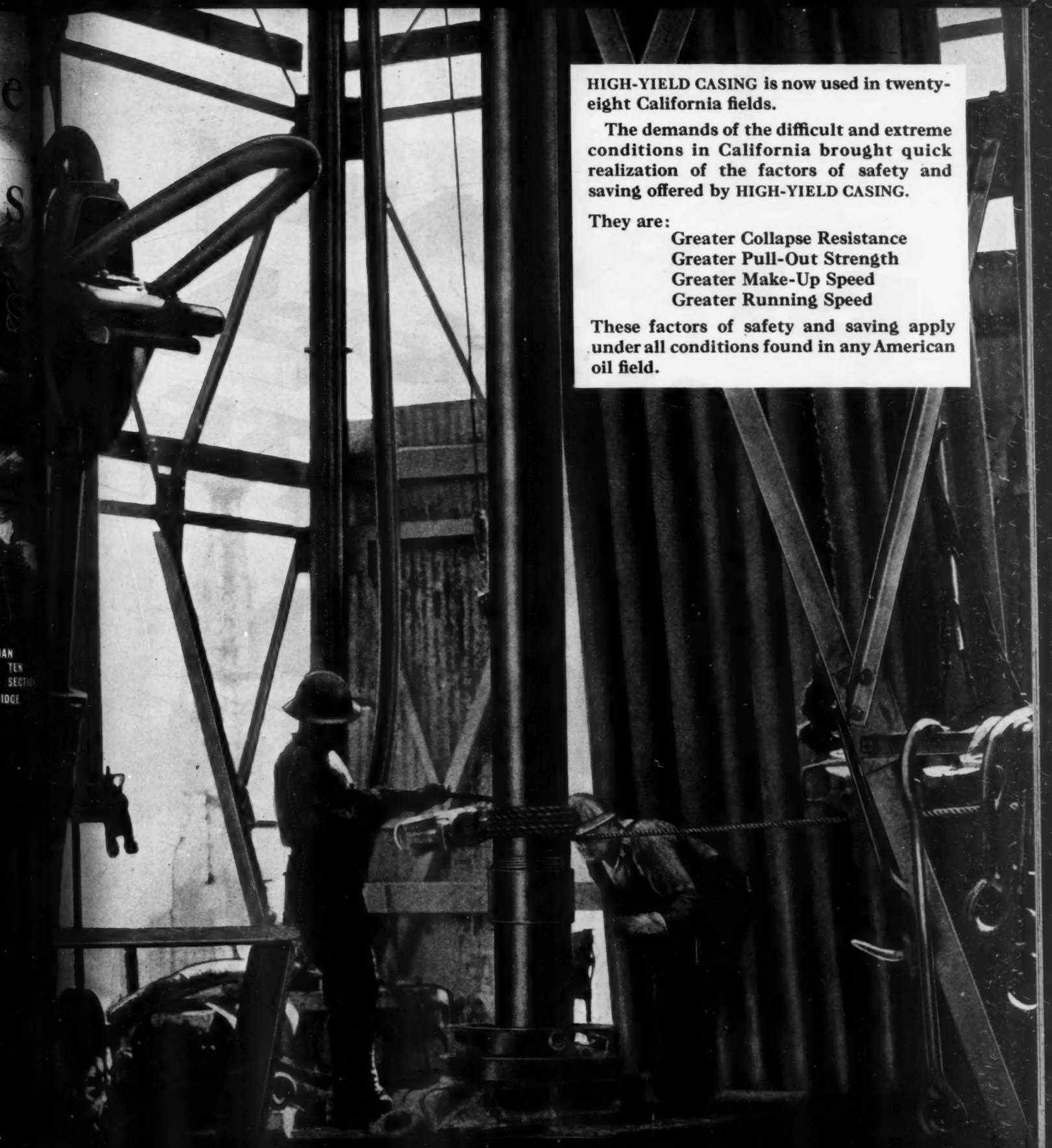
# HIGH-YIELD CASING

**GREATER COLLAPSE RESISTANCE** — **HIGHER PULL-OUT STRENGTH**

**MORE FOR YOUR MONEY** — **LOWER-COST WELLS**

HIGH YIELD CASING

Manufactured under
U. S. Patent No. 1,993,842
A. O. Smith Corporation, 1936



**HIGH-YIELD CASING is now used in twenty-eight California fields.**

**The demands of the difficult and extreme conditions in California brought quick realization of the factors of safety and saving offered by HIGH-YIELD CASING.**

**They are:**

**Greater Collapse Resistance**
**Greater Pull-Out Strength**
**Greater Make-Up Speed**
**Greater Running Speed**

**These factors of safety and saving apply under all conditions found in any American oil field.**

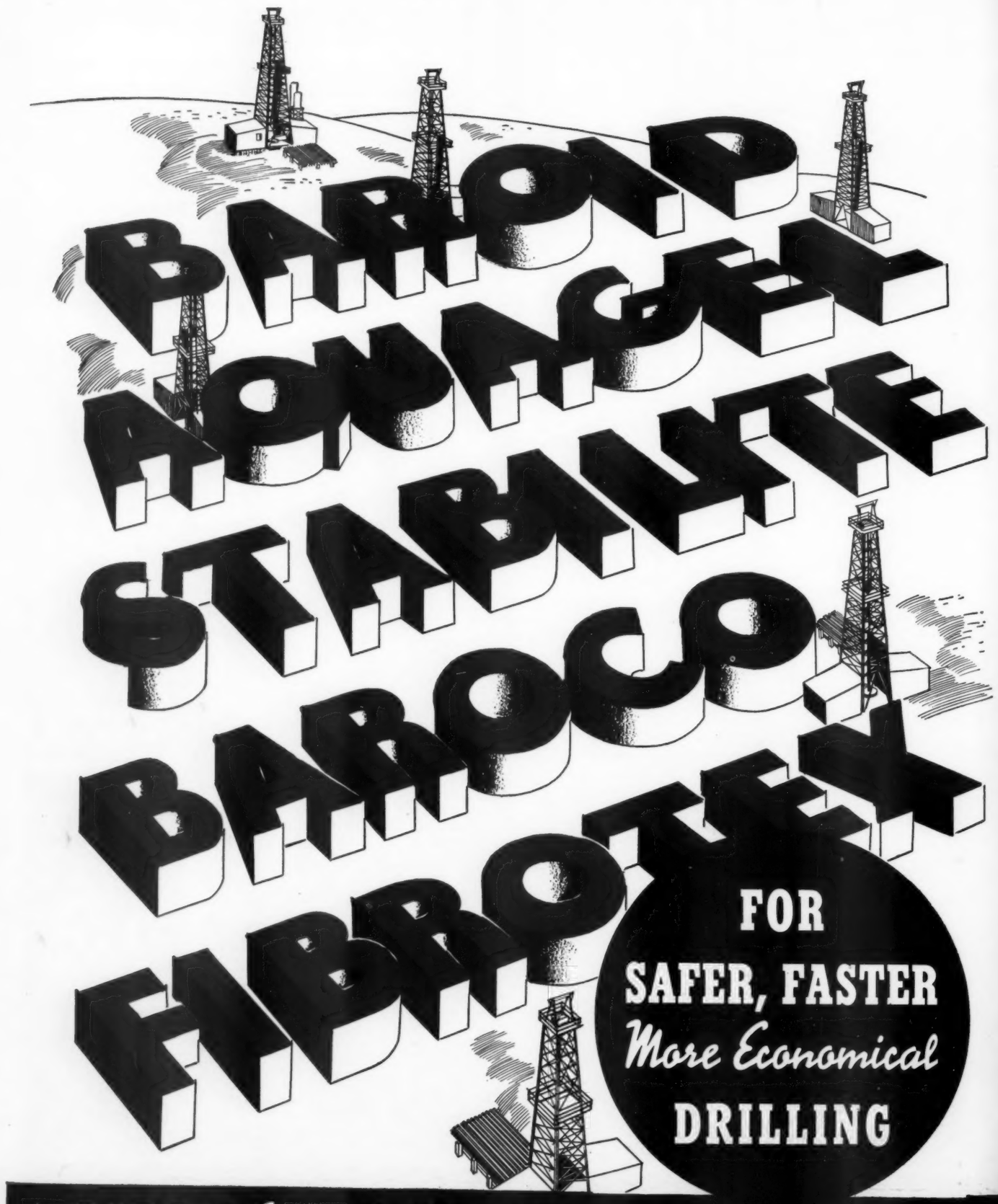
# A. O. SMITH CORPORATION

MILWAUKEE, WISCONSIN • *BRANCH OFFICES:* NEW YORK, CLEVELAND, CHICAGO, TULSA, HOUSTON, LOS ANGELES

*Making steel work for you as it never did before in—*

## SMITH HIGH-YIELD CASING

SMITH LINE PIPE—SMITH PRESSURE VESSELS




**BAROID *Sales* COMPANY**

LOS ANGELES • TULSA • HOUSTON

NATIONAL PIGMENTS & CHEMICAL CO., ST. LOUIS

# ONE TRADE-MARK . . .
# ONE RESPONSIBILITY

## backs Fairbanks-Morse Motors, Pumps, and Diesels

MOTORS, pumps, and Diesels never have been and never will be completely immune to wear or proof against occasional damage from the conditions under which they work. No machine is ever trouble-proof. So when trouble comes, you will turn to the maker for the help which you expect and need at once.

When such calls come to Fairbanks-Morse, they are answered instantly from the nearest branch—and there are 34 of them in every part of the country. And because every product bearing the Fairbanks-Morse seal is Fairbanks-Morse built, we do not have to wire back with a "Sorry, but get in touch with So-and-So, who made that part." When you buy any product with the F-M seal, the entire service and factory facilities, the entire responsibility of Fairbanks-Morse stands behind it.

Think what this means not only in satisfaction but in actual time and money savings when emergency comes!

For complete information on Fairbanks-Morse motors, pumps, or Diesels for every requirement, address Department N-931, Fairbanks, Morse & Co., 900 S. Wabash Avenue, Chicago, Illinois. 34 branches at your service throughout the United States.

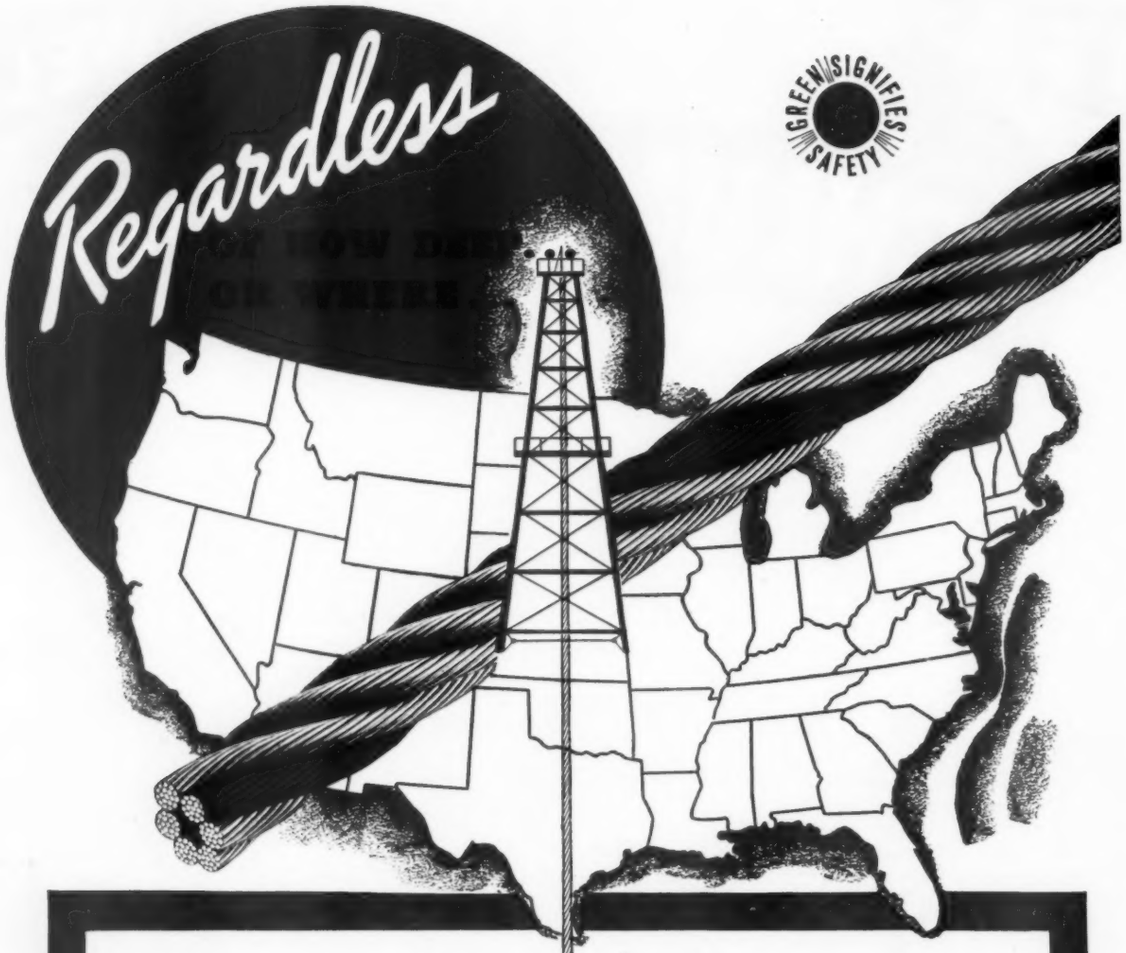
6770-EOPA02.1.

**FAIRBANKS, MORSE & CO.**

MANUFACTURERS • CHICAGO, ILLINOIS

This
INTERESTING
TEST
Concave Side
Shows exactly how
the
is saving
DOLLARS
Wherever Machinery Turns
Bend *any* V-belt and *feel* it change shape. The top, under tension, *narrows.* The bottom widens. The sides of the belt bulge out. The result is a shape that does not fit the sheave groove—as shown in Figure 1, below.
WHAT HAPPENS
WHEN A V-BELT
BENDS
1
STRAIGHT SIDED
BELT
2
BELT WITH PATENTED
CONCAVE SIDE
Now, bend a V-belt built with the patented *Concave* side. You get the *same* shape change but *now* the new shape *exactly fits* the sheave groove—as shown in Figure 2. There is no side-bulge. Results? (1) *Uniform* side-wall wear; *longer life!* (2) Full side-wall grip on the pulley means no slippage; saves belt wear and *power!*
The Gates Vulco Rope is the only V-belt built with the patented concave side.
*Engineering Offices and Stocks in All Large Industrial Centers*
THE GATES RUBBER CO., Factory Branches
Terminal Bldg.
HOBOKEN, N. J.
1524 So. Western Ave.
CHICAGO
741 Warehouse St.
LOS ANGELES
2213 Griffin St.
DALLAS
999 So. Broadway
DENVER
GATES VULCO ROPE DRIVES

IT'S A
WELL
"SCHLUMBERGER"
THEY CALL IT a "Schlumberger Well." And justly so . . . for without an electrical logging test made by Schlumberger it would have been abandoned as dry and the field would not have been discovered.
Here's what happened: This well was drilled below 7,000 feet without an oil show. Before setting the second pipe string they called for a Schlumberger test to avoid casing off a possible pay sand without a record of it. The test showed 40 feet of oil sand near the 4,000-foot level. However, before testing the sand indicated by Schlumberger, the hole was drilled to nearly 10,000 feet for possible deep pay, but without success. Casing was then perforated at the depth shown on the Schlumberger log, and it made a good well which is now producing all that proration allows.
This well is one of the many proving the advantages of "running a Schlumberger" before giving up the large investment you have in a hole that has a producing chance.
SCHLUMBERGER
WELL SURVEYING CORPORATION
HOUSTON, TEXAS U. S. A.
"Electrical Well Logging"




**TRU·LAY** *Preformed* **Rotary Lines**

**1**—do not have to be back twisted;

**2**—are easier to thread through the traveling block, crown block, and eye in the drum;

**3**—whip less at high speeds;

**4**—spool evenly and tightly (even under the light weight of the idle block);

**5**—resist kinking, require no seizing, and handle both easier and faster;

**6**—last longer—thereby cutting down replacement, labor and shut-down costs.

TRU-LAY is preferred because it is preformed by the American Cable Company. Let American Cable engineers help you. They have had *12 years' experience* with preformed rope.

**AMERICAN CABLE COMPANY**, Wilkes-Barre, Pennsylvania

An Associate Company of the American Chain Company, Inc.

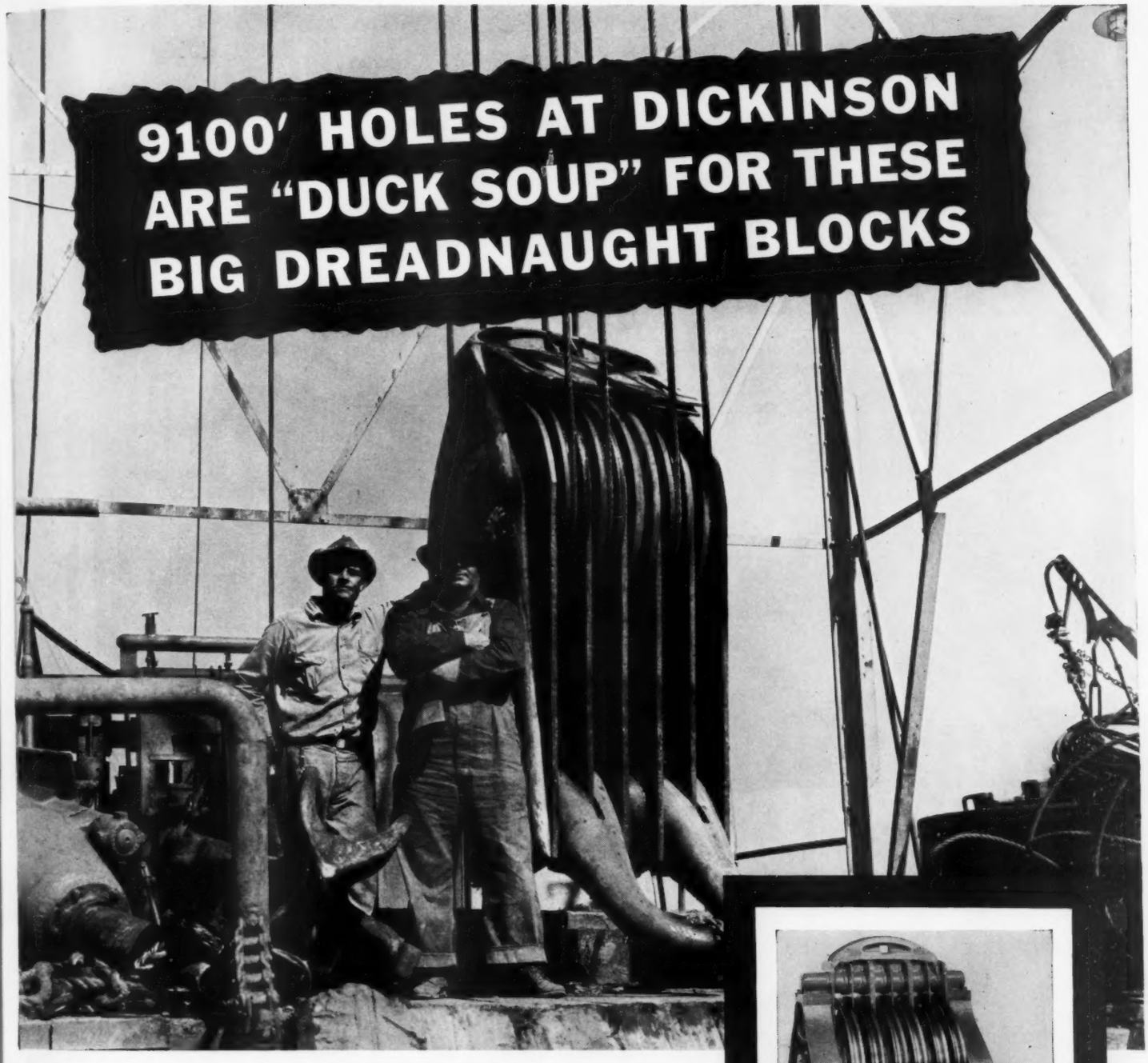
*IN BUSINESS FOR YOUR SAFETY*

Branches or Distributors in all Oil Field Centers

**TRU·LAY** *Preformed* **Rotary Lines**

❄ ALL AMERICAN CABLE COMPANY LINES MADE OF IMPROVED PLOW STEEL ARE IDENTIFIED BY THE EMERALD STRAND

# 9100′ HOLES AT DICKINSON ARE "DUCK SOUP" FOR THESE BIG DREADNAUGHT BLOCKS



At Dickinson, as in other deep producing fields in the Gulf Coast and Mid-Continent, these big DREADNAUGHT Drilling Blocks are handling the heavy loads encountered with the greatest of ease, and with plenty of capacity to spare. In fact, they're built with a high factor of safety to drill twelve, or even fifteen thousand foot holes.

Shown on the derrick floor is the Type "PY" DREADNAUGHT 300-Ton Capacity Traveling Block, with one sheave guard removed, as it was about to be moved to another location. Its five 42" O.D. sheaves are of wear-resisting manganese-molybdenum steel. Line grooves are machined to absolute smoothness. The 7.873" diameter center pin is forged from a special alloy steel, and is drilled to provide lubrication for each Hyatt heavy duty roller bearing. The becket and bail pin are of large diameter nickel steel. Streamlined construction, eliminating all projecting pin heads, nuts, and sharp corners, together with a low center of gravity, make it possible to run this block at high speed with safety.

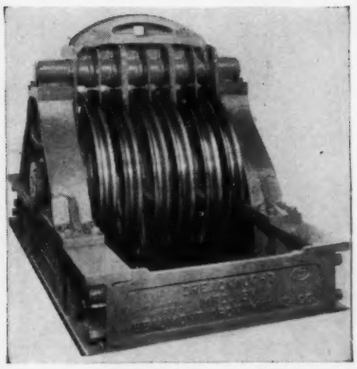
The Type "KY" DREADNAUGHT 360-Ton Capacity Crown Block, mate to the Type "PY" Traveling Block, is shown at right.

## BEAUMONT IRON WORKS COMPANY

"Selling Through Frick-Reid Stores Everywhere"

*Branch Offices:*

HOUSTON DALLAS LONGVIEW ODESSA, TEXAS
and TULSA, OKLAHOMA.

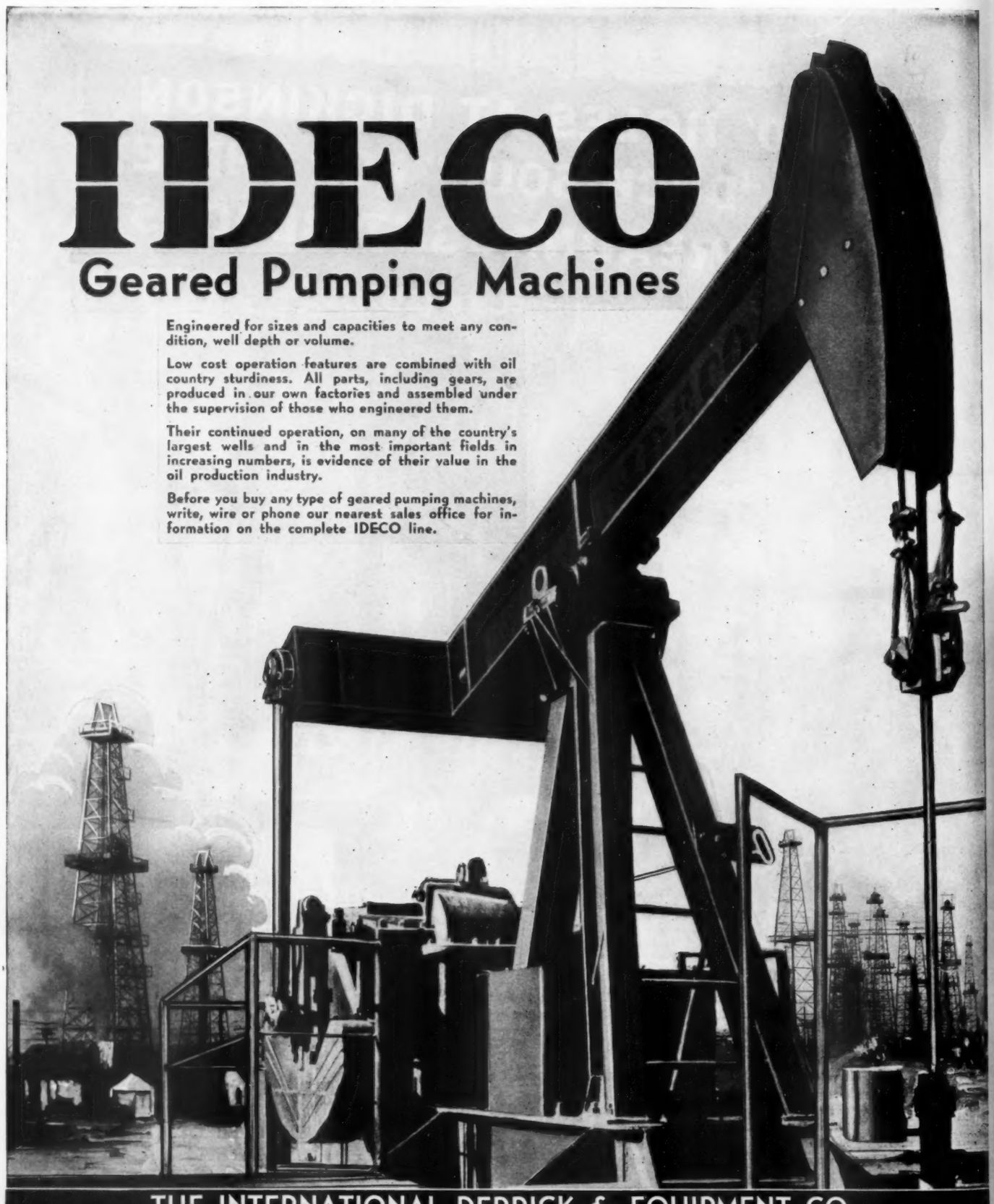


### FEATURES OF THE TYPE "KY" DREADNAUGHT CROWN BLOCK:

360 ton capacity . . . . five or six 42" O.D. manganese-molybdenum steel sheaves . . . . special built Hyatt Roller Bearings . . . . 7.873" diameter forged alloy steel center pin . . . . patented A-frame construction reduces overall height and distributes load evenly to all corners of derrick.

# IDECO

## Geared Pumping Machines



Engineered for sizes and capacities to meet any condition, well depth or volume.

Low cost operation features are combined with oil country sturdiness. All parts, including gears, are produced in our own factories and assembled under the supervision of those who engineered them.

Their continued operation, on many of the country's largest wells and in the most important fields in increasing numbers, is evidence of their value in the oil production industry.

Before you buy any type of geared pumping machines, write, wire or phone our nearest sales office for information on the complete IDECO line.

**THE INTERNATIONAL DERRICK & EQUIPMENT CO.**

DIVISION OF INTERNATIONAL STACEY CORPORATION

Beaumont, Texas - Columbus, Ohio - Los Angeles, Cal.

PLANTS

IDECO, Columbus, Ohio IDECO, Marietta, Ohio
IDECO, Delaware, Ohio IDECO, Beaumont, Texas
IDECO, Torrance, Cal.
Stacey Brothers Gas Construction Co., Cincinnati
Routs-Connersville Blower Corp.
Connersville, Ind. and Pottstown, Pa.

YEARS OF EXPERIENCE IDECO THE WORLD OVER

DIVISION SALES OFFICES

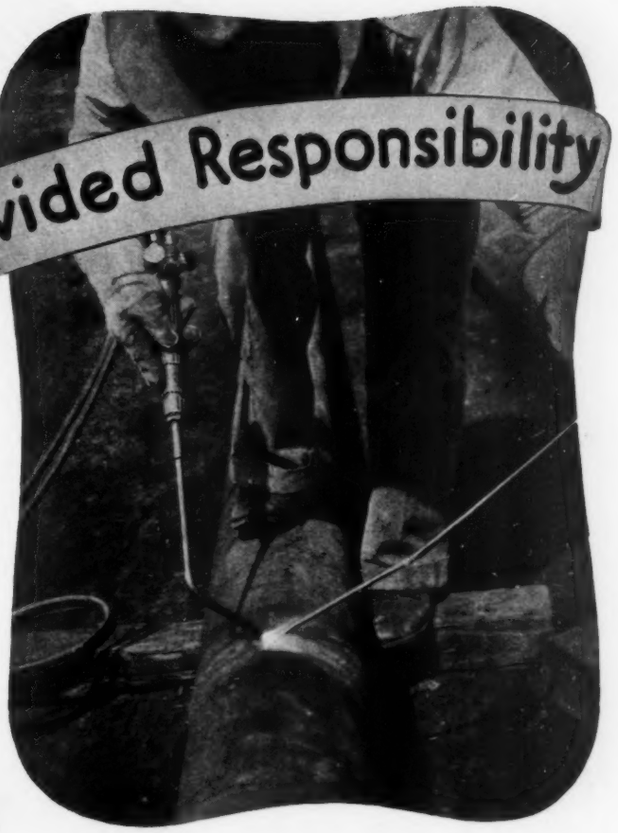
New York, Beaumont, St. Louis, Columbus, Kilgore, San Francisco, Los Angeles, Pittsburgh, Cincinnati, Tulsa, Dallas, Buenos Aires, Chicago, Detroit, Wichita, Houston, Boston

*Branches in All Active Fields*

# AIRCO

One Source of Supply—Undivided Responsibility

*for Anything and Everything*



**needed in**

# Welding and Cutting and Hard Facing

- OXYGEN AND ACETYLENE
- AUTOMATIC GAS CUTTING MACHINES
- WELDING AND CUTTING TORCHES AND TIPS
- COMPLETE WELDING OUTFITS
- COMPLETE CUTTING OUTFITS
- COMBINATION WELDING AND CUTTING OUTFITS
- GAS WELDING RODS
- GAS PRESSURE REGULATORS
- HOSE CONNECTORS AND ALL OTHER ACCESSORIES
- PORTABLE PIPE CUTTING AND BEVELING MACHINE
- PORTABLE WELD TESTING MACHINE
- WILSON ELECTRIC ARC WELDING MACHINES
- ELECTRODES
- HARD FACING EQUIPMENT AND RODS
- METAL SPRAYING EQUIPMENT
- AIRCO-NATIONAL CARBIDE

Full information about any of these products will be cheerfully furnished upon request to the nearest office.

From AIRCO'S nation-wide supply service you can get any and all items required in performing the operations of welding (gas or electric arc), flame cutting or hard facing.

To deal with a single source of supply is more than a great convenience—it's good business—especially when that source of supply is noted for the high quality and dependability of its products and the promptness and reliability of its service.

And another excellent reason for making AIRCO your source of supply is the co-operation of AIRCO'S APPLIED ENGINEERING DEPARTMENT available to all customers for solving welding and cutting problems and for practical instruction in the correct and economical application of the processes and use of equipment.

## AIR REDUCTION SALES COMPANY

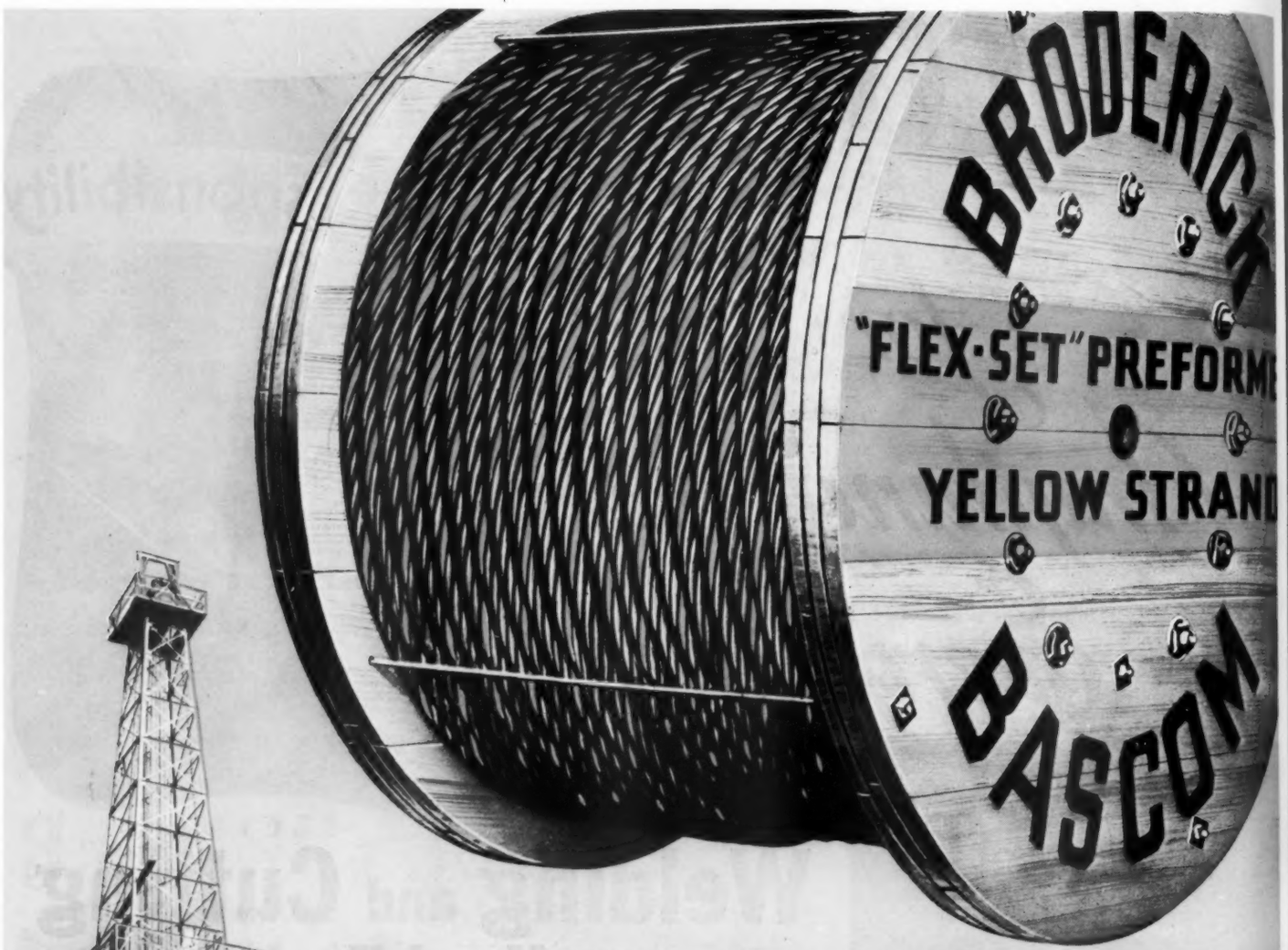
General Offices: 60 East 42nd St., New York, N. Y.

DISTRICT OFFICES

Baltimore, Bettendorf, Ia., Birmingham, Boston, Buffalo, Charlotte, Chicago, Cincinnati, Cleveland, Dayton, Detroit, Jersey City, Kansas City, Mo., Los Angeles, Louisville, Milwaukee, Minneapolis, New Orleans, Oklahoma City, Philadelphia, Pittsburgh, Portland, Ore., Richmond, San Francisco, Seattle, Shreveport, La., St. Louis, Wheeling

Distributed in Texas by Magnolia Airco Gas Products Co., Houston, Beaumont, Wichita Falls, El Paso, Fort Worth and San Antonio

Represented in Canada by Railway & Engineering Specialties, Ltd., Toronto, Montreal, Winnipeg




# That EXTRA Quality

Except that one strand is yellow, "Flex-Set" Preformed Yellow Strand Rotary Lines look like any other lines. Then where is that extra quality that makes for extra economical service? The answer is:

It's in the extra quality wire drawn to our own exacting specifications—It's in the extra care used in testing that wire in our laboratory—It's in the selection of those wires which will produce the fine balance of flexibility, elasticity, strength and toughness so necessary to rotary lines.

Finally, it's in the preforming, which sets the wires and strands to the helical form they will occupy permanently in the finished lines. They are thus largely pre-broken in—limp—easy to handle and install—highly resistant to kinking, drum crushing, fatigue.

Try "Flex-Set" Preformed Yellow Strand Rotary Lines for economy.

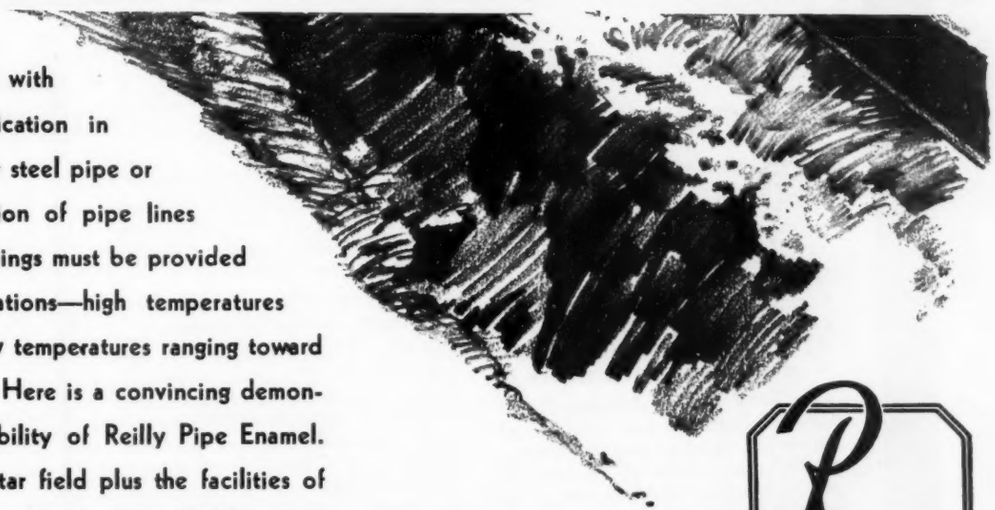
BRODERICK & BASCOM ROPE CO., Factories, St. Louis; Seattle; Peoria.

## "FLEX-SET" PREFORMED YELLOW STRAND ROTARY LINES

**CONTINENTAL SUPPLY CO.**
**Mid-Continent and Rocky Mountain Distributors**

# *Inherent Dependability*

# REILLY PIPE ENAMEL & PRIMER



Reilly Pipe Enamel and Primer serve with equal dependability in every application in which a reliable protective coating for steel pipe or plate is demanded. In the construction of pipe lines for oil transportation dependable coatings must be provided to withstand wide temperature variations—high temperatures ranging toward 200°F without sag—low temperatures ranging toward 20°F subzero cold without chipping. Here is a convincing demonstration of the quality and dependability of Reilly Pipe Enamel. Four decades of service in the coal tar field plus the facilities of 15 modern plants provide a background of dependability upon which users of Reilly Products rely with confidence.

The above sketch shows the application of Reilly Pipe Enamel and Primer to an actual pipe line installation.

Reilly
COAL TAR PRODUCTS

**FOR PIPE LINE PROTECTION PROBLEMS CONSULT REILLY... OUR SERVICES AND FACILITIES ARE YOURS TO COMMAND**

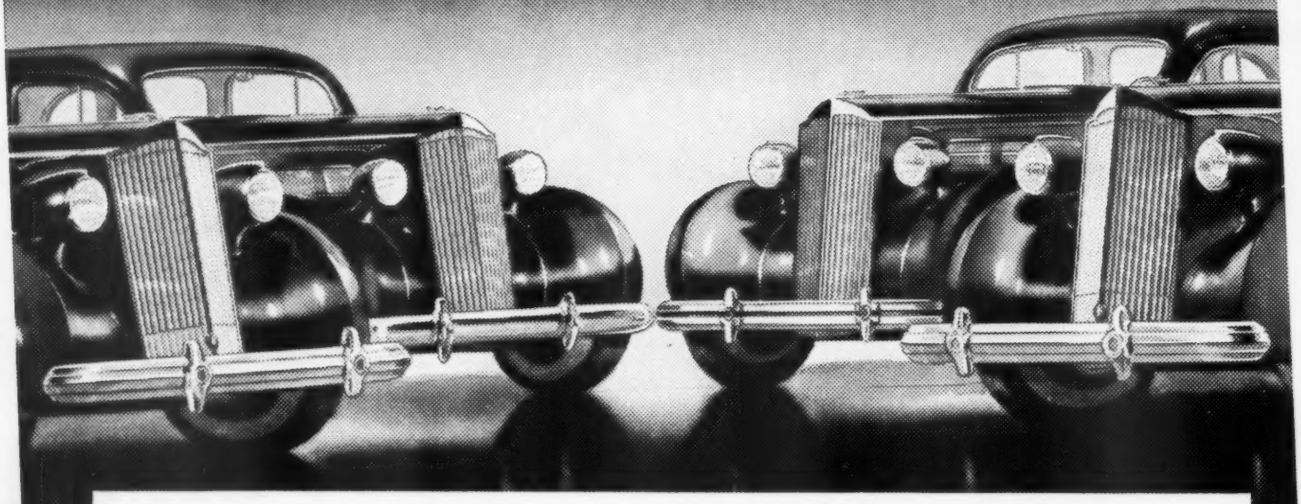
## REILLY TAR & CHEMICAL CORPORATION

*Executive Offices: Merchants Bank Building, Indianapolis, Indiana*

2513 S. DAMEN AVENUE, CHICAGO, ILLINOIS  500 FIFTH AVENUE, NEW YORK, N. Y.  ST. LOUIS PARK, MINNEAPOLIS, MINN.

**FIFTEEN PLANTS TO SERVE YOU**

# Four great *new* Packards...
# *FOUR NEW LOW PRICES!*



## For 1937, Packard presents the top-quality car in each of four price classes

FOR 1937 Packard offers you the four greatest Packards ever built. Each is the leader of its price class. *And each sells for a new low price!*

***The 1937 Packard Twelve*** is the finest car money can buy. It steps so far ahead mechanically for 1937 that there simply is no other make of car with which to compare it.

***The 1937 Packard Super-Eight*** succeeds both last year's Eight and Super-Eight, and brings to motorists a combination of mechanical advancements which promise to revolutionize fine-car motoring.

***The 1937 Packard 120*** is proof that a car can be a sensation *three times in a row.* This car, whose outstanding performance has been the talk of the motoring world, is an *even better car this year.*

*And*—out of Packard's 36 years of experience in building fine cars, now comes a brand-new Packard *—The Packard Six.*

***The greatest low-priced car America has ever seen***

Priced at $795, list at factory, the new Packard Six is a car that is destined to completely re-shape the low-priced car picture! It brings to its field a combination of qualities that no car of this price has ever possessed before—*long mechanical life combined with long style life.*

The Packard Six, and its brother Packards, are now ready for you to see and drive. Come in at your earliest convenience and let us demonstrate the tremendous values these Packards offer this year.

THE BRAND-NEW PACKARD SIX
**$795**
*And up, list at factory, standard accessory group extra*

THE GREATER PACKARD 120
**$945**
*And up, list at factory, standard accessory group extra*

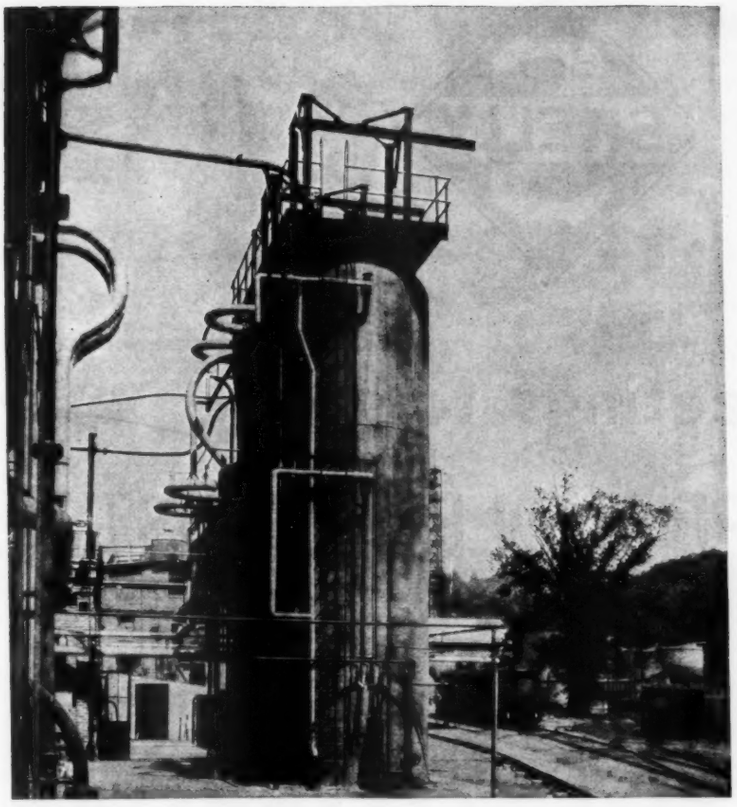
THE NEW PACKARD SUPER-EIGHT
**$2335**
*And up, list at factory*

THE ADVANCED PACKARD TWELVE
**$3420**
*And up, list at factory*

***Every Tuesday night— THE PACKARD HOUR, starring Fred Astaire—NBC Red Network, Coast to Coast, 9:30 E. D. S. T.***

## VISIT YOUR LOCAL PACKARD SHOWROOM

★ *ASK THE MAN WHO OWNS ONE* ★



"GRAYTREATING"

# THE GRAY PROCESS

## ENABLES REFINERS TO MEET CHANGING MOTOR FUEL REQUIREMENTS

- Each year a greater number of automobiles require superior motor fuels with higher octane rating and less gum content.
- The Gray Process for producing gasoline of high octane rating and low gum content has won wide acceptance among refiners for meeting these changing market conditions.
- Some reasons for this wide acceptance are:

  Elimination of the losses in both volume and octane numbers incurred in acid treating.

  The investment cost per barrel of gasoline treated is low.

  Reduction in the number of steps formerly required to produce high grade antiknock gasoline.

  The units are simple in design—operating and maintenance costs are exceptionally low. The process is adaptable to large or small cracking units.

- Investigate the possibilities of producing high grade antiknock gasoline with lower treating costs through installing the Gray Process.

## THE GRAY PROCESSES CORPORATION

*Licenses granted under United States and Foreign Patents by The Gray Processes Corporation*

**11 COMMERCE STREET • NEWARK • NEW JERSEY**

Greetings to the

AMERICAN PETROLEUM INSTITUTE

FROM

# SKELLY OIL COMPANY

TULSA, OKLAHOMA

KANSAS CITY, MISSOURI

EL DORADO, KANSAS

AROMAX ETHYL GASOLINE

AROMAX GASOLINE

POWERMAX GASOLINE

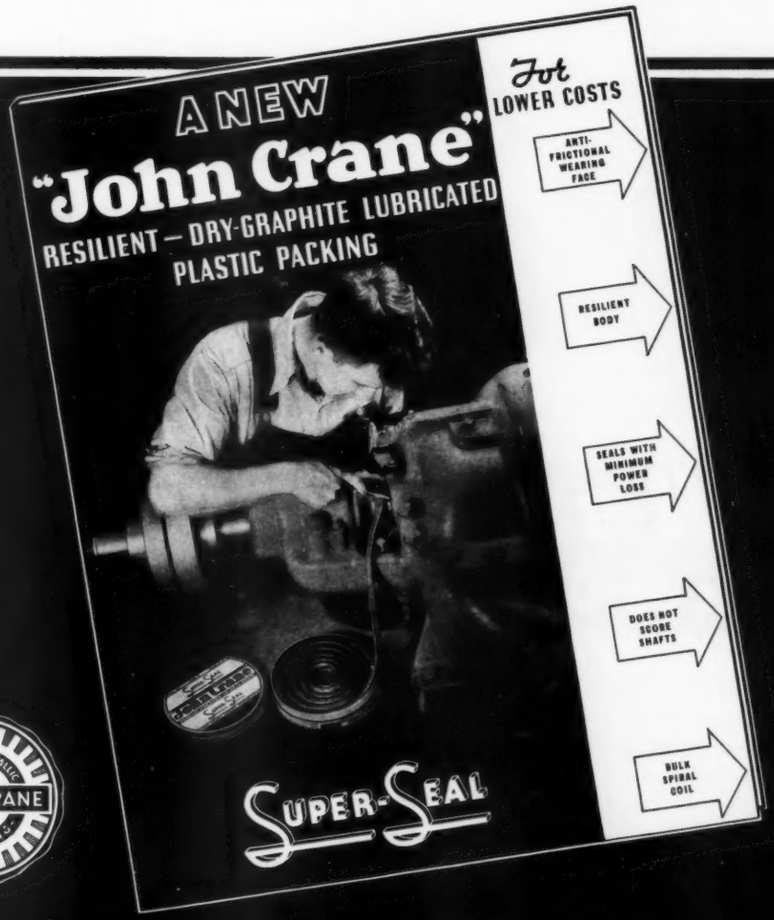
TAGOLENE OILS AND GREASES

"QUALITY HAS NO SUBSTITUTE"

# If You Use Packings

# SEND *for this* BULLETIN

## DESCRIBES A NEW PROCESS PACKING THAT'S GRAPHITIZED




FLEXIBLE METALLIC TRADE JOHN CRANE MARK PACKING

Every fiber of SUPER-SEAL is *graphitized*... anti-frictional... with dry graphite and asbestos bonded by an exclusive process... contains no volatiles, nothing to be squeezed out—driven off... 1000° temperatures do not affect it ... SUPER-SEAL is anti-frictional to the last shred... the *one* packing for *all* services. Write for bulletin *now*.

## CRANE PACKING COMPANY

1805 CUYLER AVENUE CHICAGO, ILLINOIS

*Branch Offices and Stocks in*

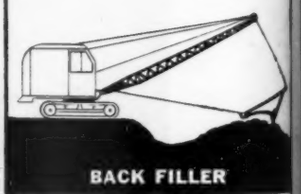
NEW YORK DETROIT PITTSBURGH CLEVELAND PHILADELPHIA BALTIMORE ST. LOUIS HOUSTON NEW ORLEANS SAN FRANCISCO SEATTLE LOS ANGELES TULSA

# IT'S A PIPE CINCH

## WITH THE P&H BANTAM WEIGHT CRANE —Truck or Crawler Mounted

CONVERTIBLE FOR ALL TYPES OF SERVICE

DRAGLINE



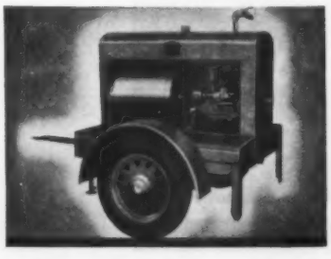
BACK FILLER

SHOVEL

● The big advantage of this fast, little machine in the oil fields is the fact that it does practically anything and moves fast enough from place to place to lose mighty little time between jobs. Whether it's loading pipe or handling it on pipe-laying jobs, the Bantam Weight has the speed and accuracy to make short work of it. Or, as a clamshell or shovel—digging basements and slush pits—back filling, pile driving, everything up and down the line.

It's faster because it's *built* for it—all welded of alloy steel to take punishment with "he-men" in the wide open spaces. It's powered by the husky Ford V-8 motor for lower operating cost with Ford service available everywhere.

The Bantam Weight is mounted on its own tractor-type crawlers or any truck chassis. It's fully convertible for service as shovel, crane, dragline, pile driver, back filler or trench hoe. Simplified attachments of alloy steel are light enough to make it practical to change from one type of service to another right in the field. . . The Bantam Weight is saving money in the oil fields. Why not for you? Write for information.



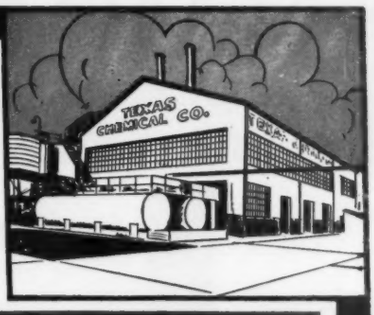
### "SMOOTHARC" P & H HANSEN WELDERS FOR PIPE LINE WORK

The new model 150 trailer welder is the ideal machine for pipe line jobs. You can take it anywhere at average speed behind your car or truck. Mounted on a two-wheel, automotive-type trailer, it's powered by a small air-cooled, direct-connected gasoline engine. Has 150 ampere capacity to handle a wide range of jobs. Single current control over the entire welding range gives you uniform current and steady arc for better welding results. Get the whole story on this new "Smootharc" model 150. Ask us to send you bulletin No. W-6.

**HARNISCHFEGER CORPORATION**

4527 W. NATIONAL AVENUE — *Established 1884* — MILWAUKEE, WISCONSIN

*Warehouses and Service Stations:* Hoboken — Memphis — Jacksonville — Seattle — Dallas — Los Angeles — San Francisco




HOUSTON, TEXAS PLANT

FORT WORTH, TEXAS PLANT

# DEPENDABLE CHEMICALS

## *Plus* QUICK SHIPPING SERVICE FROM LARGE CONVENIENTLY LOCATED PLANTS . . . . .

**WE MANUFACTURE**

- Sulphuric Acid
- Battery Acid (Electrolyte)
- Nitric Acid
- Muriatic Acid
- Texine Inhibitor
- Salt Cake (Sodium Sulphate)
- Aluminum Sulphate (Filter Alum)
- Ammonia Alum
- Animal Charcoal (Bone Black)
- Bone Meal
- Bone Oil
- Bone Grease
- Ammonium Sulphate

●

**SULPHURIC ACID—All Strengths**

Manufactured by contact process from pure sulphur which insures a uniform, high grade product, free from all objectionable impurities.

●

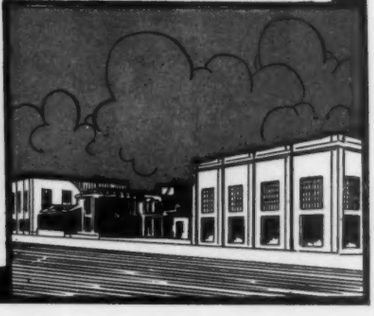
**FOR 20 YEARS**

LEADING COMPANIES of the Southwest have been profiting by using our dependable chemicals and dependable service.

BASTROP, LOUISIANA PLANT

BATON ROUGE, LA. PLANT

TEXAS CHEMICAL COMPANY
LOUISIANA CHEMICAL COMPANY, Inc.
EXECUTIVE OFFICES, PETROLEUM BUILDING
HOUSTON, TEXAS



# THE LAYNE

## Twins

SCREEN

PACKER

The efficient performance of the Layne Screen and Packer has established them as Leaders in their respective fields.

The Wire Wrapped screen allows greater inlet flow with least disruption to the formation. It will give more years of satisfactory service thereby making it a more economical screen to install.

The Layne Packer has 42 inches of closely woven canvas, spirally wrapped, that compresses to a 20-inch pack of almost iron hardness. The use of a Layne Packer is definite assurance of the end of packing troubles.

**Layne and Bowler Company**
HOUSTON, TEXAS

*Export:*
Petroleum Machinery Corp.
30 Rockefeller Plaza,
New York, N. Y.

*West Coast:*
Layne & Bowler Corp.
900 Santa Fe Avenue,
Los Angeles, California

# Talk about Portability!

The water problems that are always incident to a steam rig fade into insignificance when using Atlas Diesels. The engines require but a small amount of cooling water when the rig is set up, and after that, only occasional make-up. No expensive pumping plant and piping are required with the Diesel rig.

With transportation of equipment and fuel reduced to a minimum, rigging up time short and fuel cost low, it is no wonder that drilling contractors are fast discarding cumbersome and expensive forms of motive power in favor of the compact and readily portable Atlas Diesel Drilling Units.

**The picture at the left above shows how Jack Shaffer of Russell, Kansas loads his model OD120 Atlas Drilling Rig on a five-ton International tandem job and rolls away to the next location at 25 to 40 miles an hour.**

IF one picture is worth ten thousand words, then the two photographs reproduced here will impart more information to the drilling contractors than we could cover in a volume of text.

The drilling contractor who is accustomed to moving steam rigs from one location to another will immediately visualize the saving in transportation and set-up time when drilling with Atlas Diesels.

Not only does the complete power plant arrive on location fully set up and in alignment, but there is also less fuel transportation connected with an Atlas Diesel powered rig.

Atlas Diesels will burn almost any Diesel fuel that is free from dirt and water and flows readily. They use but half the number of gallons as gasoline motors of equal power, and because of their far greater thermal efficiency, they use but a fraction of the fuel of a steam rig.

**The picture above shows the arrangement of Jack Shaffer's Diesel-Electric Drilling Rig. The mud pump drive is mechanical and the drawworks drive is electrical. The entire unit is readily transportable with a minimum of dismantling.**

*SEND FOR A COPY OF OUR BULLETIN "ATLAS IMPERIAL DIESELS FOR ALL OIL FIELD SERVICE"*

**ATLAS IMPERIAL DIESEL ENGINE CO.**

OAKLAND, CALIFORNIA · MATTOON, ILLINOIS

*Oil Country Distributors*

K. S. RICHARDS
143 N. ROCK ISLAND, WICHITA

FACTORY BRANCH
201 FISH HARBOR WHARF, TERMINAL ISLAND, CALIF.

SOUTHERN ENGINE AND PUMP CO.
HOUSTON

ATLAS IMPERIAL

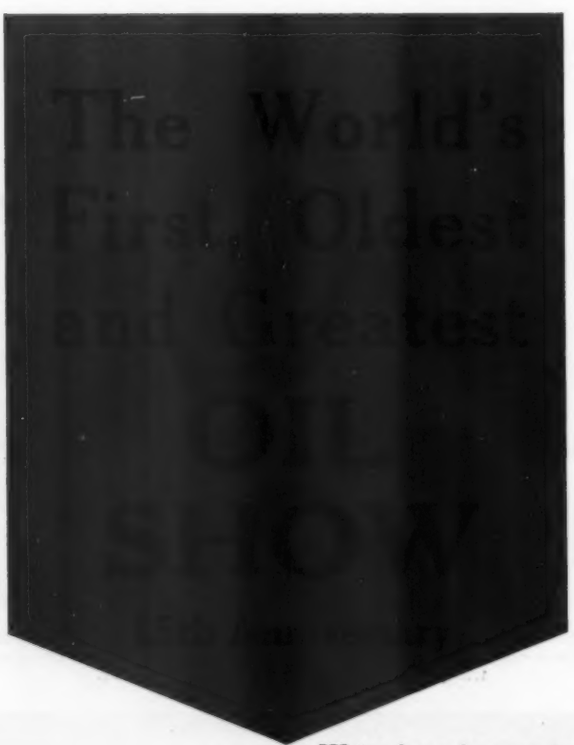
# Concerning The 1938 INTERNATIONAL PETROLEUM EXPOSITION

## Tulsa, May, 14-21, 1938

**The officers and management of the INTERNATIONAL PETROLEUM EXPOSITION take pleasure in announcing the Tenth exposition will be held, as usual, in Tulsa, Oklahoma, May 14-21, 1938. This decision is in further co-operation with the oil industry and the exhibitors, who feel that there is justification for ONLY ONE OIL SHOW every other year.**

**Participation in a great petroleum exposition, whether by oil men, exhibitors or associations allied with the petroleum industry, represents an extraordinary expenditure of time, money and effort. Leaders in all branches feel that an annual oil show exacts too great a burden on the industry. It has therefore been the policy of the officers, directors and management of the International Petroleum Exposition to hold this greatest of all industrial expositions every two years.**

**W. G. Skelly, President**




### CELEBRATING FIFTEENTH ANNIVERSARY

**The 1938 exposition will mark the Fifteenth Anniversary of the INTERNATIONAL PETROLEUM EXPOSITION. It will fittingly be celebrated. From a crude beginning in 1923, with what was not much more than a street carnival and home coming event, the big Tulsa oil show grew swiftly into the world's greatest exposition devoted to a single industry—and has held this unique position permanently. It is an exhibition of great educational value—an exposition of the latest methods and machinery devised by the ingenuity of man to solve the problems of the great petroleum industry—to increase efficiency, eliminate waste, bring safety to human life and protection to vast property investments. You'll want to have a part in this important anniversary event of a great world institution. Make your plans now.**

**Write for advance information on the 1938 Exposition.**

**Wm. B. Way, General Manager, Tulsa, Okla., U.S.A.**

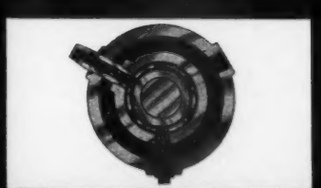
*The World's Fair of the Oil Industry*

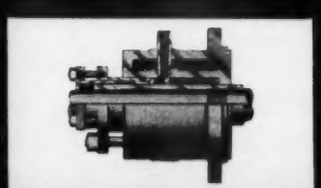
*Double case forged steel hot charge pump. Discharges 466 gpm at 8th stage against 1000 lbs. pressure, and 170 gpm at 10th stage against 1200 lbs. pressure. Patented and patents pending.*

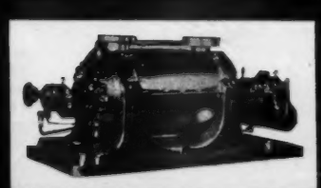
FOR HOT OIL AT HIGH PRESSURES

# PACIFIC CENTRIFUGAL PUMPS

4 NEW DEVELOPMENTS







PIONEERS in the pumping of hot oil, with centrifugal pumps, Pacific offers experience and service to meet varied refinery requirements. Available are complete lines of Double Case Forged Steel Pumps and Single Case Cast Steel Pumps. Incorporated in both are advanced features of design, exclusive to Pacific. The merits of these developments and of the pump as a unit are reflected in the reliability and efficiency of Pacific performance.

Recognition of their records in the field is provided by repeated installations of Pacific Hot Oil Pumps in major refineries throughout the world.

*Pacific's Bulletin Number 66 completely describes the application of design, methods of manufacture, materials and workmanship to the varied problems of pumping hot oil under pressure. Other bulletins available on cold oil pumps.*

PUMP WORKS

PACIFIC PUMP WORKS

HUNTINGTON PARK • CALIFORNIA

PACIFIC PUMPS

# Lubrotite

# VALVES

*for high or low pressures ... hot or cold*

● In this valve grease guns force a protective lubricant-sealing compound between seats and wedge rings. Where a pin scratch will cause ordinary gate valves to leak, Lubrotite Valves stay tight even when pitted or deeply grooved.

This new principle in valve construction resists the action of corrosive liquids, prevents sticking and does away with expensive valve replacements.

You are invited to write for information and to consult our staff of engineers regarding any valve problems which may confront you.

READING-PRATT & CADY COMPANY
Bridgeport, Connecticut
*An Associate Company of the American Chain Company, Inc.*

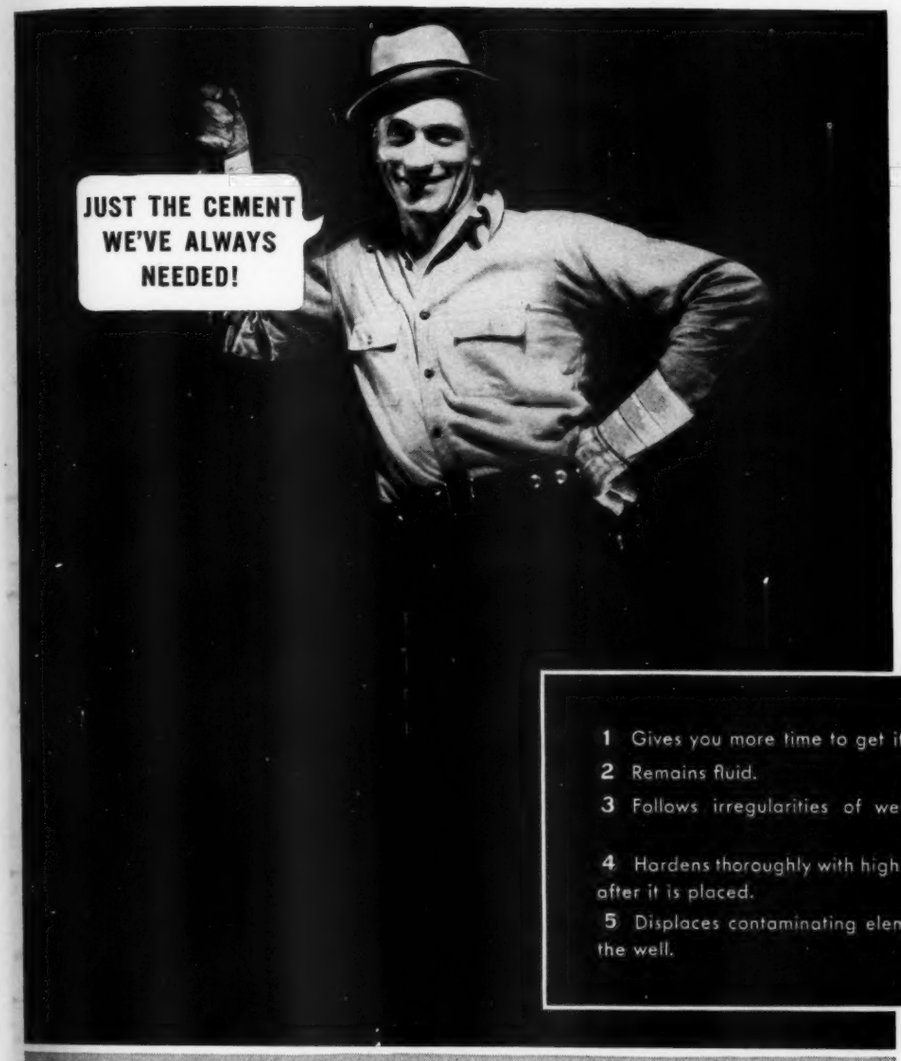
*In Business for Your Safety*

ACCO

**READING·PRATT & CADY VALVES**

# UNAFLO SALES TRIPLED!

## SUCCESS OF NEW OIL WELL CEMENT BRINGS RUSH OF ORDERS




WE were sure that operators would like UNAFLO. But the enthusiastic reception given this new oil well cement has exceeded our expectations.

UNAFLO sales tripled in one week. But the most significant fact is this: *UNAFLO has proved itself on every job for which it has been recommended.*

To quote a few of the reports from the field:

"UNAFLO did a perfect job on Bremer No. 6 at temperature of 194° F."

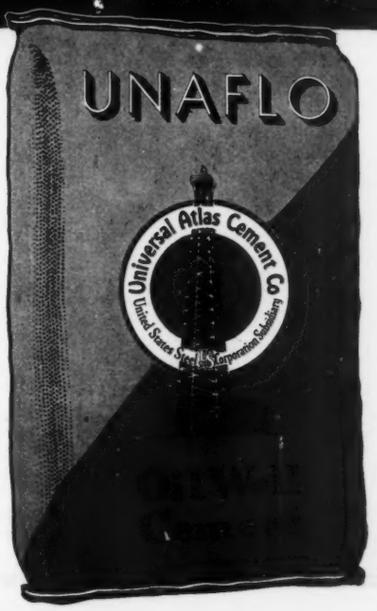
"Used UNAFLO in Rodessa Field. Will continue to use UNAFLO because we find it has adequate safety factor."

"Used UNAFLO on Cotton Valley job at depth of 8550 feet. Held against a pressure of over 2000 lbs. per square inch and good cement was back of casing at 5500 feet. Proof of this is fact that production is being taken from this depth with no presence of salt water which is known to exist above present production."

Try this better oil well cement—for deep well cementing, for wells where high temperatures exist—for squeeze and plug-back work. UNAFLO flows easier. Sets slower. Forms a casing seal of extremely high density and impermeable character. Does these things under the pressure and high temperature of deep-well jobs.

And remember—UNAFLO has a safety factor adequate to protect your well investment!

1 Gives you more time to get it down.
2 Remains fluid.
3 Follows irregularities of well bore.
4 Hardens thoroughly with high density after it is placed.
5 Displaces contaminating elements in the well.
6 Not stiffened by mud contamination.
7 Not stiffened by salt water contamination.
8 Sets in sulphate water.
9 Requires no ice.
10 Makes squeeze and plug-back jobs easier, surer and more successful.




U-5

# UNAFLO

**FOR SAFE DEEP-WELL CEMENTING AT HIGH TEMPERATURES**

**UNIVERSAL ATLAS CEMENT CO.**

*United States Steel* U.S. STEEL *Corporation Subsidiary*

**AMICABLE BUILDING, WACO, TEXAS**
**KANSAS CITY • TULSA • OKLAHOMA CITY**

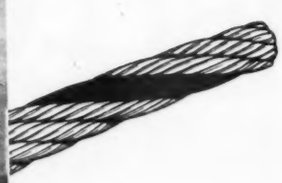
"Hercules" (Red-Strand)
Rotary Lines

"Hercules" (Red-Strand)
Cable-Tool Lines

"Hercules" (Red-Strand)
Casing Lines

"California Special"
Cable-Tool Lines

Sand Lines



Round Strand

Flattened Strand

Preformed

Non-Rotating

# Strong, Tough and Durable

Drillers everywhere know from past experience that a wire line to "stand the gaff" on the tough jobs, must not only possess high degrees of strength, toughness and durability but also, that these characteristics must be in perfect balance.

It is the correct combination of these characteristics found in "HERCULES" (Red-Strand) and other Leschen Wire Lines that gives you such dependable and long-lasting service. No one of them is developed at the expense of another. Our 79 years of rope making experience has taught us what this correct balance is, and our modern testing laboratory insures a consistency of this balance in every line.

## A. LESCHEN & SONS ROPE CO.

ESTABLISHED 1857

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NOW—for the first time—the right TYPE and SIZE of arc to suit every job... every time
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A book, replete with illustrations, has been carefully compiled to give you the facts you should know to be abreast of this welding advancement. By all means YOU SHOULD HAVE THIS BOOK! The coupon will bring you a free copy without delay. THE LINCOLN ELECTRIC COMPANY, Dept. N-323, Cleveland, Ohio. Largest Manufacturers of Arc Welding Equipment in the World.

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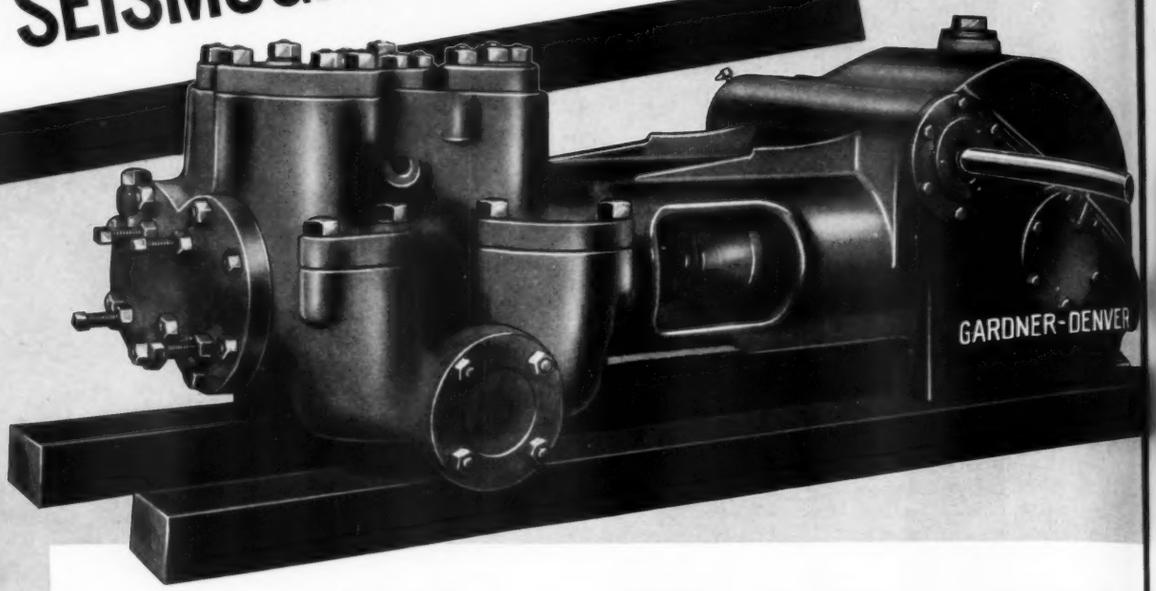
# FOR CORE DRILLING, GEOPHYSICAL AND SEISMOGRAPH WORK—




*Gardner-Denver FXG Power Pump*

## A Heavy Duty Pump—MINUS Excessive Weight

- **Herringbone gears—increased mechanical efficiency**
- **One-piece Valve Pot Type Fluid End**
- **All fluid end valves same size**
- **Each valve individually accessible**
- **Convenient suction openings—suction may be taken from either side**

"FXG" POWER PUMP

POT VALVE TYPE DUPLEX POWER PUMPS (6" STROKE)

| Displacement in U. S. Gallons Per Minute * | Maximum Pressure for Slush Service | SIZE (Inches) | | Displacement in Gallons Per Revolution | Revolutions Per Minute | Tight Pulley (Inches) | | Pipe Sizes (Inches) | | Relief Valve (Inches) | | Approx. Shipping Wt. Standard Pump, Pounds |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Diameter of Fluid Cylinder | Length of Stroke | | | Diameter | Belt | Suction | Discharge | Slush | Oil & Water | |
| 80-120 | 325 | 4½ | 6 | 1.6 | 50-75 | 24 | 5 | 3 | 2 | 1½ | 1¼ | 2220 |
| 63-95 | 415 | 4 | 6 | 1.26 | 50-75 | 24 | 5 | 3 | 2 | 1½ | 1¼ | 2220 |
| 35-52 | 730 | 3 | 6 | .693 | 50-75 | 24 | 5 | 3 | 2 | 1½ | 1¼ | 2220 |

* Actual displacement with rods deducted.

Cylinder liners and pistons are interchangeable in the above sizes.

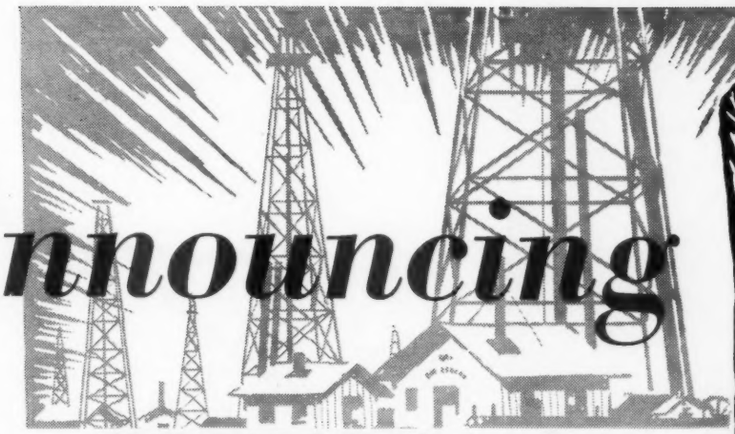
SINCE 1859

GD

**GARDNER-DENVER COMPANY • QUINCY, ILLINOIS**

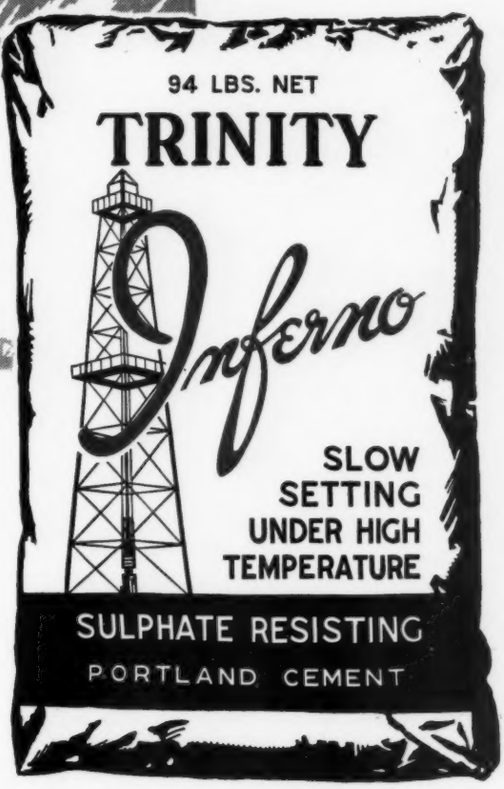
*Oil Country Offices:* Dallas • Houston • Kilgore • Tulsa • Los Angeles

GARDNER-DENVER



# Announcing

## TRINITY
# INFERNO
## *Sulphate Resisting*
## PORTLAND CEMENT
### SLOW SETTING UNDER HIGH TEMPERATURE
## *Designed for Deep Well Cementing*




● After exhaustive research and tests made at the request of leading oil companies in collaboration with their technical men, Trinity Portland Cement Company has perfected, and now introduces, "INFERNO," the Slow-Setting, Sulphate-Resisting Portland Cement made especially for High Temperatures encountered in deep-well cementing. A *true* Portland Cement, with no admixtures, "INFERNO" is as easy to mix as standard Portland Cement, and has the viscosity, pumpability or fluidity so desired by oil men. It sets slowly, yet hardens quickly, developing a high strength within one day. Try "INFERNO" on your next job—see for yourself the advantages "INFERNO" gives.

## TRINITY PORTLAND CEMENT COMPANY

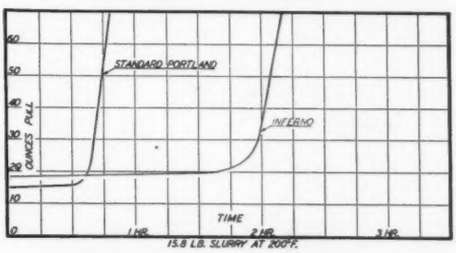
*Manufacturers of* Trinity Standard Portland Cement, Trinity "High Early Strength" Portland Cement and Trinity Mix Masonry Cement.

**DALLAS • FORT WORTH • HOUSTON**

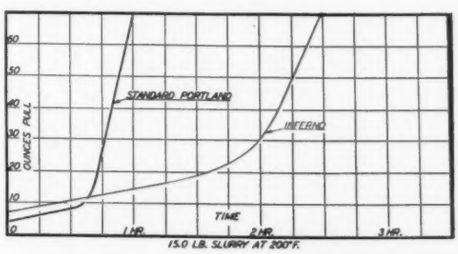
AVERAGE SETTING TIME OF INFERNO CEMENT SLURRY
*Using Vicat Needle in Hot Water*

| 15.8 lbs. per gal. 44% water | | Temperature in Degrees F. | 15.0 lbs. per gal. 54% water | |
|---|---|---|---|---|
| Initial Set | Final Set | | Initial Set | Final Set |
| 3 hrs. 5 min. | 4 hrs. 0 min. | 200 | 3 hrs. 15 min. | 4 hrs. 10 min. |
| 2 hrs. 40 min. | 3 hrs. 8 min. | 150 | 3 hrs. 0 min. | 3 hrs. 35 min. |
| 3 hrs. 20 min. | 4 hrs. 20 min. | 100 | 4 hrs. 5 min. | 5 hrs. 5 min. |
| 5 hrs. 50 min. | 8 hrs. 0 min. | 70 | 8 hrs. 25 min. | 10 hrs. 40 min. |

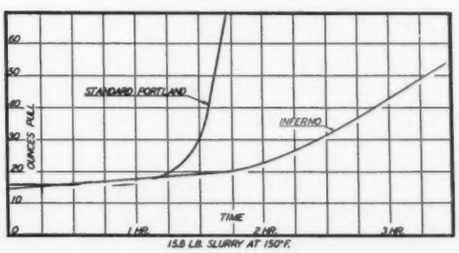
Comparative Fluidity of "INFERNO" Cement Slurrys at High Temperatures



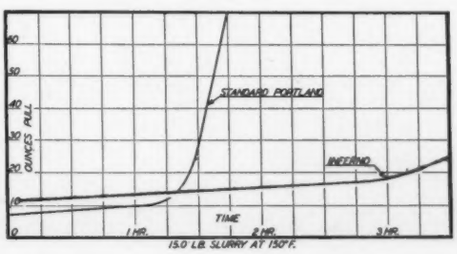
15.8 LB. SLURRY AT 200°F.



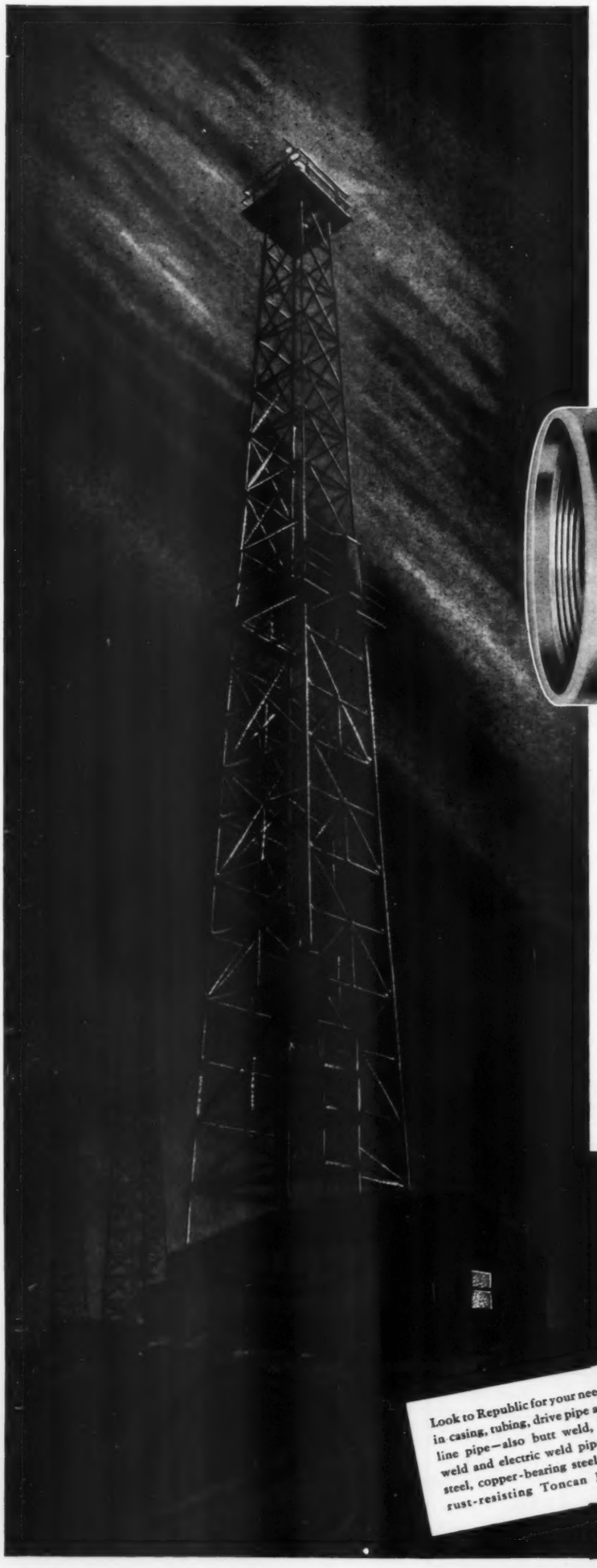
15.0 LB. SLURRY AT 200°F.



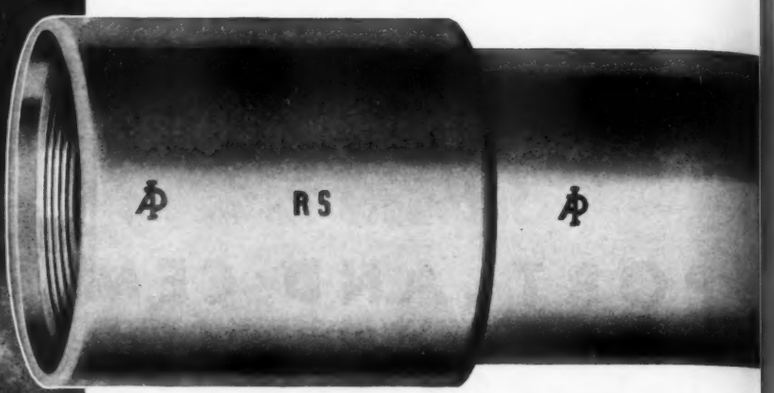
15.8 LB. SLURRY AT 150°F.



15.0 LB. SLURRY AT 150°F.



*It will*

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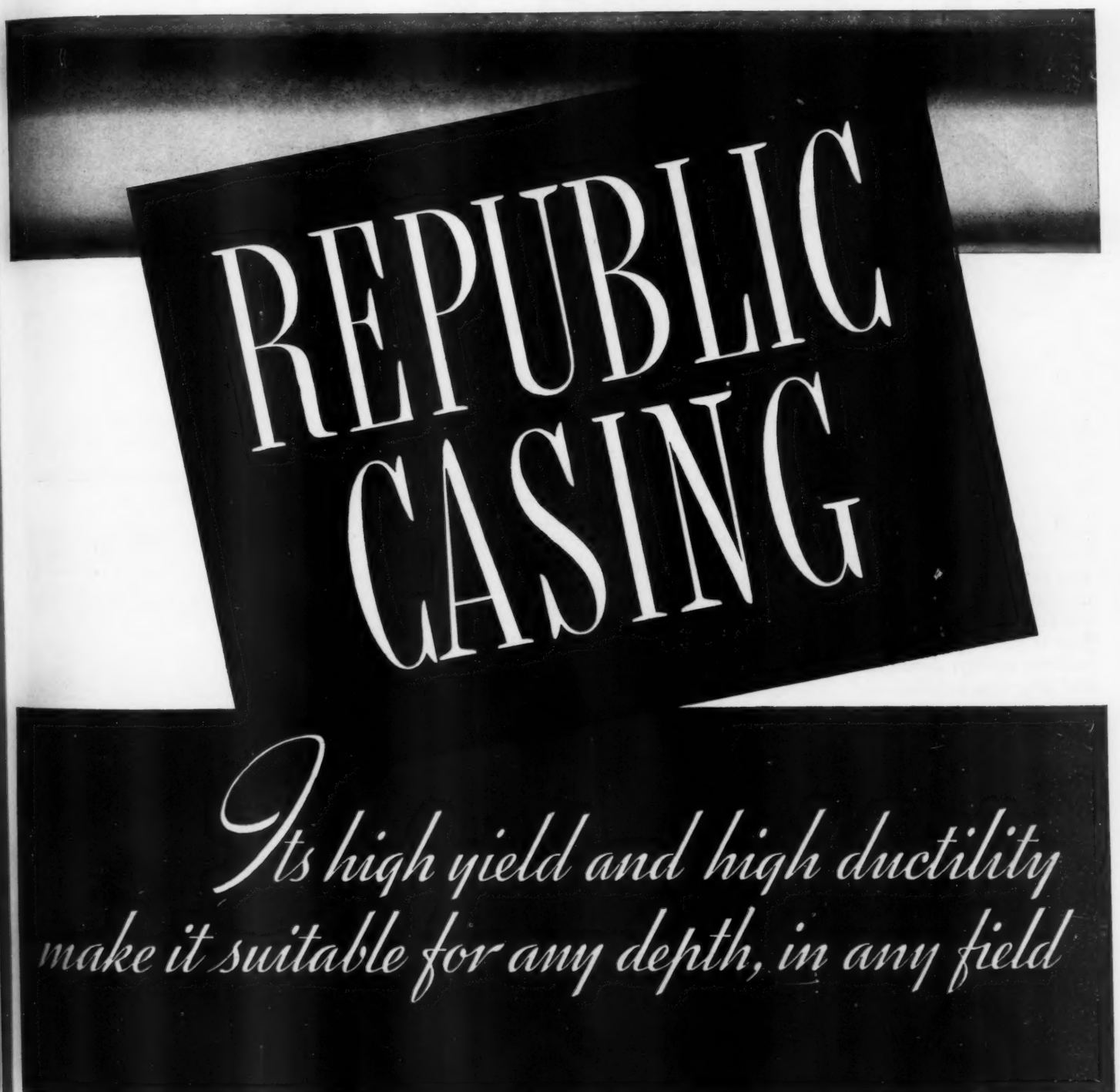
*ll pay you to Standardize on*




*Its high yield and high ductility make it suitable for any depth, in any field*

*When writing Republic Steel Corporation for further information, please address Department OG.*

A few of the master gages and instruments used in checking J & L Pipe

## HE WORKS *for you*, CHECKING AND INSPECTING J & L PIPE QUALITY . . .

Every sixth man employed in the J&L Seamless Steel Tube Department is *your* man, as truly as though he were on your payroll. Five out of every six *make* J & L Seamless Pipe; the sixth man—*your* man—inspects it to assure uniform high quality. He makes sure that rejections are made at the mill and not in the field. He's one of the big reasons why the J & L mark on pipe is your complete guarantee of uniform quality, dependable service and long-time satisfaction.

This sixth man makes chemical tests of raw materials; analyzes the steel for chemical and physical properties; checks the bloom pickling; examines the seamless pipe; verifies the wall thickness; checks pitch and taper of threads; inspects couplings; makes hydrostatic tests, and rechecks all previous inspections.

When you next need casing, tubing, drill pipe or line pipe, specify J & L Seamless.

**JONES & LAUGHLIN STEEL CORPORATION**
AMERICAN IRON AND STEEL WORKS
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*Send for new J & L Oil Country Handbook!*

The new J & L Handbook, OC 3—"J & L Tubular Products for the Oil Industry" contains interesting information on pipe manufacture and helpful designing data. Send for your copy now. No obligation!

The J & L Warehouse at Memphis carries, under cover, large and diversified stocks of oil country tubular products ready for immediate shipment for Mid-Continent, Southwestern and Gulf Coast regions. Also, J & L distributors maintain large stocks at strategic points in these fields and in California.

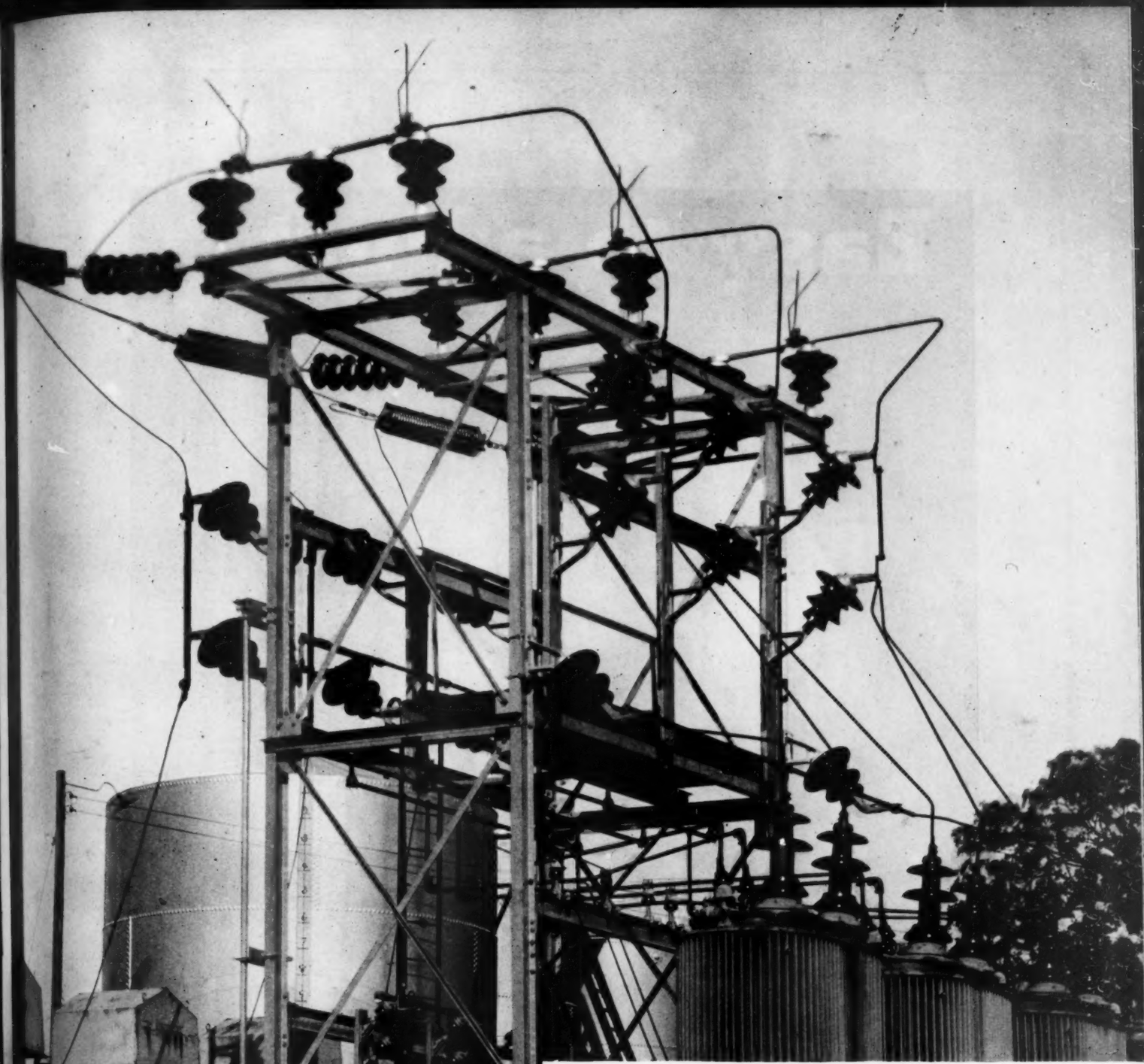
Other J & L products for the petroleum industry: Steel for Derricks and other structural purposes; Tin Plate for containers; Tank Barges; and Bars, Shapes, Plates, Steel Piling, Concrete Reinforcing Bars, Wire and Nails, for maintenance, construction and repairs.

J&L PIPE

**J & L SEAMLESS**

DRILL PIPE · CASING · TUBING · LINE PIPE

J&L STEEL



# *Economical Power.... Standardized Service*

No Oil Man need be concerned with taxes, insurance, maintenance or any other detail in connection with clean, dependable Purchased Electric Power. One bill each month covers everything. Your local power company is a member of the Petroleum Electric Power Club, and shares the helpful plans of the organization to render even greater service to the Petroleum Industry.

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PETROLEUM ELECTRIC POWER CLUB

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*out in the field*

**LET'S SEE HOW EASY** it is to adjust a Westcott Orifice Meter! The door of the dust-and-moisture-proof aluminum case merely is swung open . . . exposing pressure spring, clock, chart, and recording mechanism. Or, by speedily removing the low-pressure chamber cover of the forged-steel differential gage body, the entire interior is accessible . . . without loosening a single connection that affects accuracy. Adjustments do not interfere with any of the working parts . . . few in number and simple in design, despite their many features and refinements.

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